

268. 8

Phyl 292.

By Mr. Parsons.

Hist. nat. Regnum vegetabile. Anatomia
et physiol. plantar. 611.

~~Phyl = N^o 184.~~

THE
Microscopical THEATRE
OF
S E E D S:

BEING

A Short View of the particular *Marks, Characters,*
Contents, and Natural *Dimensions*

OF

All the S E E D S of the SHOPS,
FLOWER and KITCHEN-GARDENS, &c.

WITH

Many other Curious Observations and Discoveries,
which could not be known without the Assistance
of the MICROSCOPE.

To which are added,

The *Etymology, Synonyma, Description* of Plant and Flower,
an Account of their *Virtues*, and an *Explanation* of
Botanical Terms, with proper INDEXES:

Which render it compleatly Useful to all Botanists, Gardeners, Seedsmen, &c.
and Entertaining to all Curious Observers of Nature.

Illustrated with FIGURES of the SEEDS considerably Magnified for their
better Observation, and engraven on Copper Plates by the best Hands.

V O L. I.

*In corporibus tam parvis, atque tam nullis, quæ ratio, quanta vis, tam inextricabilis
perfectio? Quapropter quæso ne nostra legentes, (quoniam ex his spernuntur multa)
etiam relata fastidio damnent, cum in contemplatione naturæ nihil possit videri super-
vacuum.*

PLIN. Hist. Nat. l. xi. c. 2.

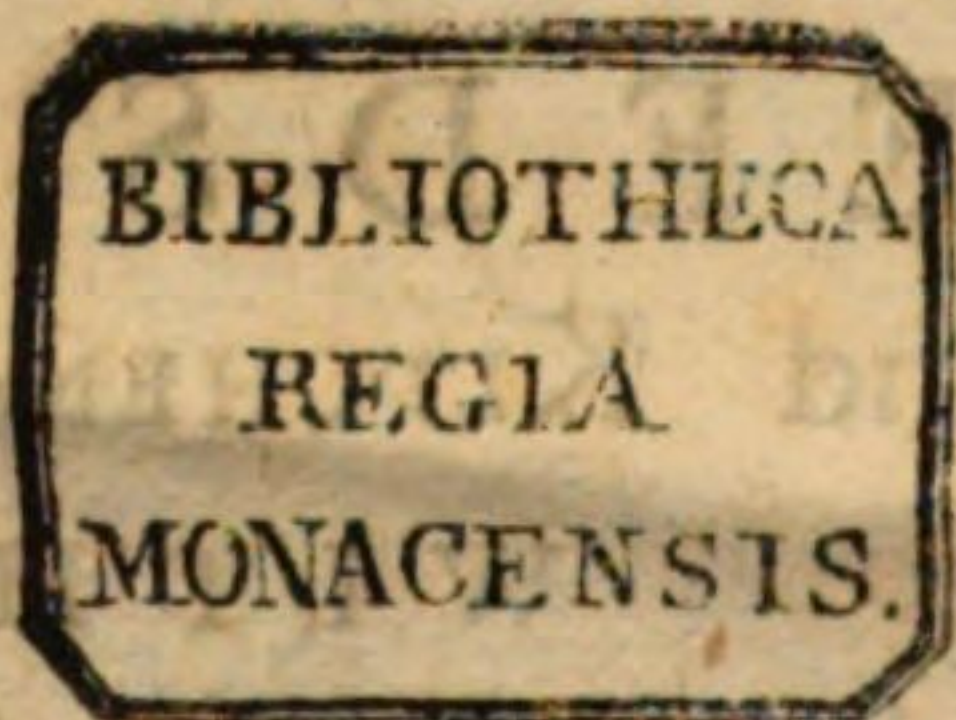
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THE
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The Eymology, Synonymes, Description of Trees and Flowers,
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VOL. I.

Printed by J. Streater, at the Sign of the Gun, in Pall-mall.
1705.

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1705.



T O

MARTIN FOLKES, *Esq;*

President of the ROYAL SOCIETY.

PERMIT me, SIR, (in claiming your Patronage for the following Work) to do myself the Honour of acquiring the Approbation of the Learned World, and of shewing them how much I am,

S I R,

Your most oblig'd

Humble Servant,

JAMES PARSONS.



ADVERTISEMENT.

THE Design of this Work is not only to reduce the System of Botany to a more easy Method for the English Reader, but also to demonstrate the surprising Appearances of the minute Parts contained in the Seeds of Vegetables. The Discoveries, which in the Progress of the Work arise before me, are not to be equal'd in any part of Nature, for their Beauty and curious Structure; the Examination of which will not only entertain the Reader, but raise in his Mind the highest Notions of the Power and Wisdom of the Divine Creator. And as this minute Inspection of dry Seeds, and their Dissection, have never been attempted before, I make no Doubt, but I shall have contributed towards laying a Foundation for some more new and useful Knowledge of the Vegetable World, than has hitherto been exhibited.

The whole Design will be comprehended in four Volumes; at the End of which will be a copious Index of the Diseases, and curious Observations throughout the whole Work.

Humble Servant

JAMES PARSONS

AN
EXPLANATION
OF THE
ABBREVIATIONS
OF
Authors Names, &c. cited in this Work.

- | | |
|---|---|
| <p>ALDROV. <i>Dendr.</i> Aldrovandi <i>Dendrologia.</i> Bonon. 1668.</p> <p><i>Alpin. Ægypt.</i> Prosperus Alpinus de plantis Ægypti, Liber. 4to. Patav. 1640.</p> <p><i>Alpin. Exot.</i> Prosperus Alpinus de plantis Exoticis, Libri duo. 4to. Venet. 1627.</p> <p><i>Barr. Icon.</i> Jacobus Barrelierus Icones plantarum per Galliam, Hispaniam & Italiam observatarum. Paris. 1714. fol. <i>Jus. Obs.</i> Antonius de Jussieu. Plantæ per Galliam, &c. in lucem editum, & ad recentiorum normam digestum. Paris. 1714. fol.</p> <p><i>Bocc. Plant. Rarior.</i> Pàulus Bocconus, Icones & Descriptiones rariorum plantarum Siciliæ, &c. Oxon. 1674. 4to.</p> <p><i>Bod. à Stapel.</i> Joannes Bodæus à Stapel in Theophrasti Historiam Plantarum. Amstelod. 1644. fol.</p> | <p><i>Boerh. Ind. A.</i> Hermanni Boerhaave Index alter Plantarum. Lugd. Bat. 1720. 4to.</p> <p><i>Breyn. Cent.</i> Jacobi Breynii Exoticarum aliarumque minus cognitarum Plantarum Centuria prima. Gedani 1678. fol.</p> <p><i>Breyn. Prodr. i.</i> Ejusdem, Prodromus fasciculi rariorum Plantarum, &c. Gedani, 1680. 4to.</p> <p><i>Breyn. Prodr. ii.</i> Ejusd. Prodromus fasciculi rariorum Plantarum Secundus. Gedani, 1689.</p> <p><i>Brom. chlor. Goth.</i> Olai Bromelii chloris Gothica, seu Catalogus Stirpium circa Gothoburgum nascentium. 1694. 8vo.</p> <p><i>Buxb.</i> Joannis Christiani Buxbaums Enumeratio Plantarum. Halæ Magdeb. 1721. 8vo</p> <p><i>Cam.</i> Joachimus Camerarius de plantis Epitome utilissima. Francofurti ad Mœnum, 1586. 4to.</p> |
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- Cam. Hort.* Ejusd. Hortus Medicus & Philosophicus. *ibid.* 1588. 4to.
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- C. B. Pin.* Casparus Bauhinus. Pinax Theatri Botanici. *Basil.* 1671. 4to.
- C. B. Phyt.* Ejusdem Phytopinax. *Ibid.* 1596. 4to.
- C. B. Prodr.* Ejusdem Prodrömus Theatri Botanici. *Ibid.* 1671. 4to.
- C. B. Cat. Basil.* Ejusd. Catalogus Plantarum circa Basileam sponte nascentium. *Basil.* 1622. 8vo.
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- C. B. Matth.* Ejusd. in Matthiolo. *Ibid.* 1674. fol.
- Cat. Angl. & Cat. plant. Angl.* Vid. *Raii. C.C.* Idem.
- C. Jamaic. & Cat. Jamaic. & Hist. Jamaic.* vid *Sloanii.*
- Cæs. & Cæsalp.* Andreas Cæsalpinus de Plantis libri XVI. *Florent.* 1583. 4to.
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Tourn. Hist. Ejusdem, Histoire des Plantes qui naissent aux environs de Paris. *Ibid.* 1698. 8vo.

Trag. Hieronymus Tragus, de Stirpium, maxime earum quæ in Germania nostra nascuntur. *Arg.* 1552, 4to.

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Turn. William Turner, M. D.

The first and second Parts of the Herbal, with the third Part lately gathered. *Collen.* 1568, fol.

Volck. Johannes Georgius Volckamerus, M. D. Flora Noribergensis, seu Catalogus Plantarum in agro Noribergensi, &c. *Norib.* 1700, 4to.



THE



THE
Microscopical Theatre
OF
SEEDS.

TAB. I. Fig. 1, 2.

FLEAWORT SEED.



PSYLLIUM, so called from $\Psiύλλα$, which signifies a Flea, from the Likeness of the Seed of this Plant to that Insect: The *Latines* for the same Reason call it *Pulicaria*, or *Herba Pulicaris*.

SYNONYMA.

Psyllium Vulgare, *Park. Theat.* 277. *Psyllium majus erectum*, *J. B.* iii. 513. *Tournf. Inst.* 128. *Elem. Bot.* 105. *Psyllium annuum majus foliis integris*, *Hist. Oxon.* iii. 262. *Psyllium majus erectum latifolium annuum*, *Boerb. Ind. A.* ii. 101. *Psyllium sive Pulicaris Herba*, *Ger. Emac.*

Emac. 587. *Plantago caulifera Psyllium dicta, Raii*
Hist. i. *Plantago caulifera Psyllium dicta majus erectum,*
Pluk. Almag. 299.

CHARACTER of *Plant and Flower.*

This common **Fleawort** consists of several round tender Branches, set full of long hairy Leaves. The Tops of the Stalks have round chaffy Knobs, beset with small yellow Flowers, which produce these little Seeds.

Mr. *Miller*, in his excellent Dictionary, says, "this Plant agrees with **Plantane**, and **Buckhorn Plantane**, " in every Respect, excepting that it rises up with leafy " Stalks, and divides into many Branches, whereas both " the others produce their Flowers upon naked Pedicles." And in this that ingenious Author agrees with Mr. *Ray* and *Plukenet*, who both call it *Plantago caulifera*.

There are several other Species of this Plant, one of which is particularly mentioned by *Gerard*, which he calls the second kind of *Psyllium* with "long and tough " Branches, of a woody Substance like the foregoing, but " longer and harder; and the chaffy Tuft which contains " the Seed is like the other, but has yet a near Resem- " blance to that of the *Pbalaris*, or **Canary Seed**; " this is the *Psyllium sempervivens* of *Lobel*." Mr. *Miller* mentions another sort, which lasts two or three Years if on a poor dry Soil, which is the *Psyllium majus spinum* of *Caspar Baubine*, the greater **Fleawort**, whose Branches spread to the Ground. The first sort, whose
Seed

Seed we make our Subject here, perishes every Year. They flower in *June*, and the Seeds are ripe in Autumn.

As it is highly necessary to precede my Microscopical Description of the Seed, with a short View of the Characters of the Plant and Flower in the Prosecution of this Work; I shall for this Purpose, chiefly have an Eye to *Johnson* upon *Gerard*, *Ray*, *Tournefort*, and Mr. *Miller's* Dictionary, cited before; who are more particularly accurate in this part of the Subject, than most others I know of; the former being chiefly taken from *Matthioli's Diosc.* and the three latter from their own Observation.

MICROSCOPICAL Description.

This Seed is very properly called *Fleawort*, as it very much resembles a Flea at first Sight, both in Size and Colour; but upon viewing it closely with a *Microscope*, it is very like the Shell called the *Cowry*, having a concave and convex side, and being of an elliptical Shape in its Outline.

In the hollow Part, *Fig. 1.* about the Middle, there is a whitish Roughness, which we shall call the *Umbilicus* of the Seed; and the whole hollow Surface is rough, and enclosed by the Edges, or rather *Labia*, which project a little over it.

The out or convex Side, *Fig. 2.* is smooth and shining like the Back of the *Cowry*, and appears much like the Outside of the Stag-Beetle's Wing, having an infinite Number of smooth Pores not unlike it; and is of a red-

dish black Colour, but without the Microscope seems intirely black.

This little Seed contains a pulpy greyish Substance, which is somewhat nauseous to the Taste, having little or no Smell ; and, in its natural Dimensions, is about the tenth of an Inch long, and about half that Breadth, being somewhat depressed longitudinally on its Back in different Places.

V I R T U E S.

Most Authors agree that they have a Cathartic Quality, evacuating bilious and other acrimonious Humors when used internally ; but they were chiefly in use for external Disorders, such as swell'd Joints and erisipelatous Inflammations, for which they were much commended, bruised, and boil'd with Oyl and Vinegar to the Consistence of a Cataplasm ; and in this or any other Intention they might be vary'd, according to the Ingredients mixed with them in external Applications. It is certainly a mucilaginous Seed, and more of an Emollient, than of any other, Nature.

T A B. I. Fig. 3.

GROMIL, or *GROMWEL* SEED.

LITHOSPERMUM, or *Milium Solis*. It is called *Milium Solis* in the Shops, for what reason I cannot find, if what *Matthiolus* says be not the Cause; he says, it ought rather to be called *Milium Soler*, as the *Moors* have it, from the Name *Soler*, a Mountain where it grows in Plenty; but *Lithospermum* seems the most proper Name, since it is taken from a Quality in the Seeds; they are so called from *Λίθος*, a Stone, and *Σπέρμα*, Seed, Stone-Seed, for two Reasons, because the Seed is exceeding hard, as its Description will shew presently, or because it is counted a Medicine efficacious against the Stone.

SYNONYMA.

Lithospermum five *Milium solis*, *Chab.* 518. *J. B.* *Tom.* iii. 590. *Raii Hist.* *Tom.* i. 503. *Synop.* *Tom.* iii. 228. *Lithospermum majus erectum*, *C. B. Pin.* 258. *Tourn. Inst.* 137. *Boerb. Ind. A.* 190. *Lithospermum majus*, *Ger.* 486. *Emac.* 609. *Mer. Pin.* 73. *Lithospermum vulgare minus*, *Park. Theat.* 432. *Lithospermum erectum vulgare majus flore ochroleuco*, *Hist. Oxon.* iii. 446.

CHARACTER of Plant and Flower.

Gerard has two kinds, the great *Gromil* which hath long slender hairy Stalks, set with long brown hoary
 C 2 Leaves,

Leaves, among which grow certain bearded Husks, bearing at the first small blue Flowers, which are succeeded by those Seeds described below. A second kind differs from the former, only in having Leaves and Seeds smaller, with a white Flower.

Miller. The Cup of the Flower consists of one Leaf, which is cut almost to the Base, into five long narrow Segments; the Flower, which is for the most part small, consists of one Leaf, is Funnel-shaped, and spread open at the Top; the Pointal is encompassed by four Embryo's, which become so many roundish hard polish'd Seeds. They flower in *June*, and the Seed is ripe in Autumn.

The Seeds described here, are the greater *Cromil*.

MICROSCOPICAL Description.

This Seed is in Figure exactly like a Human Heart, without the *Auricles*, but has no flat or depressed Part on its Sides; it is pretty circular round its thickest Part, and terminates in a blunt Cone.

At the thickest Extremity there is a circular Roughness, which is the *Umbilicus*, and from thence to the Cone, on the shortest Side, it is bisulcated longitudinally; so that the Space between the *Sulci* is a kind of Ridge, nor do either *Sulci* or Ridge extend to either Extremity of the Seed; the rest of the Surface is smooth and polished, the Ground a light Ash-Colour with a Shade, or Cloud, of yellow or brown.

These Seeds are very hard, and the Ash-colour'd Shell is brittle like that of a Hen's Egg, which being broken, it appears

appears to be lined with a light, Olive-colour'd, uniform Membrane, which encloses a *Nucleus* of a *Spanish* Snuff-Colour, pretty smooth, and of the same Form with its Shell, being in close Contact with it all round, and has a nauseous oleaginous Taste.

The natural Size of a middling Grain of this Seed, is about the eighth part of an Inch long, and the ninth of an Inch in Diameter at the roundest Part.

V I R T U E S.

These Seeds are held, amongst Authors, to be endowed with a Power of breaking and dissolving the Stone in the Kidneys, being pounded and drank with white Wine. *Quincy* says, they are powerful Diuretics, and force by the Urinary Passages very much; and are therefore very conveniently made into the Form of an Emulsion with Barley Water, or such softening Liquor, as a Guard against their Pungency.

From their Taste, there be can no Pungency in these Seeds, but as their Shells are hard, they may produce ill Effects, from their not being reduced to a Powder sufficiently impalpable, being much harder than those of Eggs; and if the latter can dissolve Stones in the Kidneys or Bladder, these perhaps may do the same.

T A B. I. Fig. 4, 5.

CUMMIN SEED.

CYMINUM or *Cuminum* in the Shops, so called from ΚΥΕΐν to bring forth, being thought among some Ancients to be good against Barrenness in either Sex. It is by *Dioscorides* called Κύμινον ἡμέρον, *Cuminum sativum*, which distinguishes it from the Κύμινον ἀγρίον, *Cuminum sylvestre*.

SYNONYMA.

Cyminum five Cuminum fativum, *J. B.* iii. 22. *Raii Hist.* i. 433. Cyminum five Cuminum, *Chab.* 384. Cuminum vulgare, *Park. Theat.* 887. Cuminum semine longiore, *C. B. Pin.* 146. Cuminum fativum *Dioscoridis*, *Ger.* 907. *Emac.* 1066. *Foeniculum Orientale* Cuminum dictum, *Tourn. Inst.* 312.

CHARACTER of Plant and Flower.

The Plant rises about a Foot high, and the Stalk is divided into small Branches, the Leaves of which are not much unlike those of Fennel, but smaller; the Tufts grow at the Top of the Branches and Stalks of a red or purplish Colour, which are succeeded by the Seed.

Miller. The Root is annual, the Leaves like those of Fennel; the Seeds are small, long, narrow, and crooked, two of which succeed each Flower, as in the other umbelliferous Plants. There is but one Species of this Plant at present known in *England*, which is the *Cuminum Mor. umb.*

Gerard says, he has proved the Seeds in his Garden, where they have brought forth ripe Seeds much fairer and greater than those brought from beyond Sea; that he sowed them in the Middle of *May*, and the Seed was ripe in the End of *July*. But Mr. *Miller*, whose Veracity and Knowledge in the Propagation of every thing the Garden affords, is not to be questioned, says, they are too tender to be cultivated to any Advantage in *England*; and that he had sown the Seeds several times in the Physick-Garden, which have come up very well, and grown to be four or five Inches high, but have constantly decayed without producing any good Seeds.

MICROSCOPICAL Description.

This Seed is double, tho' fixed side by side to one little Stem; both which while together seem like one, and are rib'd in an uneven manner longitudinally, having great numbers of little Threads or Fibres sticking out all over them, which makes them look hoary. They are thick in the Middle, and run to a Cone at each End. At the upper Extremity there is an Appearance like a Bifurcation in the Stilus, each of them belonging to its particular Seed; this appears when the Seeds are separated.

These Seeds are of a darkish Straw-Colour, the little Threads or Fibres, mentioned before, being much lighter than the Body of the Seed. Each of these Seeds contains in it a *Kernel* of an Olive-Colour, and exactly in shape like a Waterman's Boat, *Fig. 5.* and of the same Proportion, having a concave and convex side; the latter has

has a blunt Ridge like the Keel of a Boat, and the former has a white Line from one End to the other, which proves to be a Ridge, to which the *Stilus*, that rises from the little Stem of the Seed, adheres to support it.

When the Seed is broken and the little Boat laid bare, it has a quick fragrant Smell, which being volatile, goes off by lying some time in the open Air. This Fragrancy arises from a gummy Moisture, or Clamminess that appears upon its Surface when first laid bare, which, when quite dry, ceases to smell so strongly as before, and it is somewhat disagreeable to the Taste.

When the Seeds are together upon the Stem, their Length is about a fifth part of an Inch, and about an eighth part of an Inch in the broadest Part.

V I R T U E S.

These Seeds are used as Carminatives to expell Wind, taken not only in medicated Broth, or in Infusion in any convenient Liquor, but are also often useful in Clysters for the same Purposes. In Cataplasms they are a good Ingredient as a Discutient; but they seem improperly to be apply'd, as a certain Author has it, for stopping Hemorrhages of the Nose, being mixed with Vinegar. The Vinegar indeed is necessary in this Case, but as these Seeds are discutient and warm, they must also attenuate; and therefore would increase the Malady. They afford the Shops a Plaster called *Emplastrum de Cymino*.

T A B.

T A B. I. Fig. 6, 7.

D I L L S E E D.

ANETHUM, Ἀνηθον of *Dioscor.* so called, because of its quick Growth, παρὰ το ἀνωθέιν, *Aristoph.*

SYNONYMA.

Anethum, *Ger.* 878. *Emac.* 1033. *Raii Histor.* i. 415. *Mor. Umb.* 36. *J. B.* iii. 6. *Chab.* 384. Anethum Hortense, *C. B. Pin.* 147. *Hist. Oxon.* iii. 311. *Boerb. Ind.* A. 65. Anethum Hortense, five vulgare, *Park. Theat.* 886.

CHARACTER of Plant and Flower.

This Plant has a jointed Stalk about a Cubit high, which has Leaves neatly cut, much like Fennel Leaves, but smaller; the Flowers are small and yellow, standing in a Tuft, and the Root is fibrous.

Miller. "This Plant hath a slender, fibrous, annual Root. The Leaves are like those of Fennel; the Seeds are oval, plain, streaked, and border'd." *Gerard* mistakes, when he says the Seeds are round.

The Species described here, is the common Garden Dill, being that which is cultivated for use; there are however two others, mentioned by *Miller*, propagated in Physick-Gardens, viz. the *Anethum verum Pernambucense*, the true Dill of *Pernambuc*; and *Anethum segetum*

D

semine

semine minore, *Corn-Dill* with lesser Seeds. The common *Dill* flowers in *July* and *August*.

MICROSCOPICAL Description.

This is one of the foliaceous or leafy Seeds, from a Leaf or Membrane that borders it all round. It has a convex and a flat Side, and is like a Shield I once saw, in general. The convex Side, *Fig. 6.* has three Ridges, which at each Extremity are nearly in Contact with each other, and separate by Degrees till they are at their widest Distance upon the most convex Part. The Ridges are pretty uniform, but the Spaces between them are somewhat rugged; they are, in the whole, of an oval Shape, having at the narrowest End a little Process, into which probably the Stem is inserted; and at the other End, where the Ridges meet, there is a kind of rugged Opening, which I take to be the *Umbilicus* of this Seed.

On the flat Side, *Fig. 7.* there appears a white Line, which is the Rising, to which the *Stilus* adheres from the Stem, on each Side of which there is a Depression, and the rest is flatish and rough. The Back and Belly of the Body of the Seed are of a brown Colour, but the Leaf or Border is of a Straw-Colour, inclining to an Oker, having a rugged Rising all round where it joins the Seed.

This Seed has a warm pungent Taste, and a fragrant Smell; its inner Contexture is like that of the following Seed. See its Description.

V I R T U E S.

The **Dill** Seeds are of the Class of Carminatives, therefore good against Wind used as the foregoing ; it is said to be a Specific against the Hiccup, and Vomiting : And a Decoction of the Leaves, or Seeds, is much used for increasng Milk in Nurses Breasts ; it is also said to promote Urine ; and *Mathiol. in Diosc.* says, that the Plant boiled in Oyl is a good Medicine to ease Pain, and digest crude Humors. Its Efficacy, in these Cases, might perhaps have induced the College of Physicians to retain this Oyl in the Dispensatory, under the Title of *Ol. Anethi.* The Ashes of this Plant apply'd to old moist Ulcers, especially about the Pudenda, will dry them up, according to the forementioned Authors. These Seeds are also much used to put into Pickle with Cucumbers : Mr. *Miller* directs those who use them for this Purpose, to cut them up before the Seeds are quite form'd or ripe.

T A B. I. Fig. 8, 9.

C A R A W A Y S E E D.

C A R U M, this Seed took its Name from the Kingdom of *Caria* in lesser *Asia*, where it was first found by the Ancients in great Plenty.

SYNONYMA.

Carum five Careum, *Ger.* 879. *Raii Hist.* i. 446.
 Carum vulgare, *Park. Theat.* 910. Carum five Caris,
Mor. umb. 24. *Hist. Oxon.* iii. 296. Caros, *J. B.* iii. 69.
 Cuminum pratense Carui offic. *C. B. Pin.* 158. Carui,
 Carus, Carum, & Careum, *Chab.* 391. Carui Officina-
 rum.

CHARACTER of Plant and Flower.

This Plant has a hollow four-square Stalk near three Foot high, full of Knots or Joints, from which proceed several small Branches, full of jagged or cut Leaves, like Carrots or Dill. At the Top of the Stalks grow several white Tufts like those of Dill, which are succeeded by the Seed. Its Root is like that of Parsley, white, and sometimes yellow.

Miller. " It has winged Leaves, which are cut into
 " small Segments, and are placed opposite on the Stalks,
 " having no Foot-stalk ; the Petals of the Flowers are
 " bifid, and shaped like a Heart ; the Seeds are long,
 " slender, smooth, and furrow'd." He also mentions
 three other kinds besides the common Caraway, as the
Carui semine majore, the large-seeded Caraway, *Vaill.*
Carui foliis tenuissimis Asphodeli radice, *Tournf.* the nar-
 rowest leaved Caraway, with *Asphodel* Roots. *Carui*
alpinum, *C. B.* alpine Caraway. The first of these
 has a large and better Seed than the common Caraway
 now in use. They flower and seed from May to August.

MICRO-

MICROSCOPICAL Description.

This is a ribbed Seed, having a convex and a flat Part, and in general, much resembles the Hull of a Ship, being curved and shaped in that manner; the convex Side or Bottom has three Ribs, one in the Middle, and one of each Side; from each of these there is a Space on each Side, which ends in the Edge of the flat Part or Deck of the Hull, which Edge is made of another Rib, all round, and resembles the Gunnel of a Ship; these Spaces may be called the Sides of the Hull.

All these Ribs or Ridges run longitudinally as in the former described Seed, and are of a yellow Oker Colour, between which the Spaces are rough, somewhat striated, and of a brown Colour like the *Dill*. When I separated this ridged Cortex, it contained an Olive-colour'd Grain, with Risings and Depressions proportionable to those Ridges of its Covering; this Olive Surface appears to be a Membrane which includes a *Parenchyma*, which, with one of the greatest Magnifiers, looks much like *Sperma Ceti*, a little less Clear than ordinary.

I observed two of these Seeds sticking together upon the same Stem, and examining the *Stilus*, it appear'd to be bifid, and that each Seed only stuck to its Division of the *Stilus* without a *Theca* to receive it.

The Smell and Taste of this Seed differs not greatly from the former, is about one Eighth of an Inch long, and not quite half that Thickness.

VIRTUES.

These Seeds are commonly used in the Confectionary upon several Occasions, and their use in Medicine differs not from the last described Plant and Seed.

T A B. I. Fig. 10.

WHITE POPPY SEED.

PAP AVER *album*. The Greek Name of the Poppy is Μηκῶν, from *Dioscorid.* who distinguishes the several Kinds by proper Characters: as Μηκῶν ἡμερος, *papaver sativum*, the cultivated Poppy, which is this white-seeded one. Μηκῶν ποιάς, *papaver erraticum*, the wild Poppy. Μηκῶν κερατίτις, *papaver corniculatum*, the horned Poppy, and Μηκῶν ἀρρώδες, *papaver spumeum*, the frothy Poppy.

This Plant seems to have been called so παρὰ τὸ μήκος, *a Longitudine*, from its Length, *Eustath.* and as to its Latin Name *Papaver*, it has it either because *Pavorem in somniis parit*, it sometimes causes Fear in one's Sleep, or *quod cum pane pascebant*, because they eat it mixed in their Bread, or because it was an Ingredient in Pap, *Papæ indebatur adversus insomnia.*

SYNONYMA.

Papaver hortense femine albo, sativum Dioscoridi, album Plinio, C. B. Pin. 170. Raii Hist. i. 853. Tourn. Inst.

Inst. 237. *Boerb. Ind. A.* 279. *Papaver fativum album*,
Ger. 296. *Emac.* 369. *Papaver hortense simplex femine*
albo, *Hist. Oxon.* ii. 275.

CHARACTER of Plant and Flower.

The Leaves of the Garden or **white Poppy** are pretty long, broad, and smooth, indented a little at the Edges. The Stalk is above a Yard long, and strait, on whose Top grow white Flowers, which are succeeded by longish or elliptical Pods or Heads, with a *Corona* at the Top. Internally the Head is divided into *Lamineæ*, which contain the Seed. *Gerard* mentions another **Garden Poppy**, of which there are two sorts, black and white: the Flowers of the black, says he, are red, and the Seed black, and the other hath both the Flowers and Seed white; and indeed most of the **double Poppies** are white, red, purple, scarlet, or a Variegation of some of these Colours.

Miller. "The Flower for the most part consists of
 " four Leaves, which are placed orbicularly, and expand
 " in form of a Rose; out of whose Flower-cup (which
 " consists of two Leaves) rises the Pointal, which af-
 " terwards becomes the Fruit or Pod, which is
 " oval or oblong, and adorned with a little Head; un-
 " der which, in some Species, is open'd a Series of Holes,
 " quite round into the Cavity of the Fruits, which is
 " defended lengthways with various Plates or Leaves, to
 " which a great number of very small Seeds adhere."
 This Author mentions eighteen different sorts under this
 Head,

Head, with their *Latin Synonyma*. I shall only trouble the Reader here with their *English* Names, which will give him at one View their different general Characters, so as that he may know them wherever he chances to meet them.

1. Garden-Poppy white Seeds.
 2. Garden-Poppy black Seeds.
 3. Double red Poppy.
 4. Double white.
 5. Double purple.
 6. Black double flower'd.
 7. Poppy with jagged Flowers.
 8. Double jagged Poppy, striped Flowers.
 9. Rough oriental Poppy, large Flower.
 10. Red or Corn-Poppy.
 11. Great wild Poppy, variegated Leaves.
 12. Double wild Poppy, called Dwarf Poppy.
 13. Wild Poppy, with double vermillion Flowers.
 14. Wild Poppy with a double fiery Flower.
 15. Wild Poppy, with a double fiery Flower edged with white.
 16. Wild Poppy with a double purple Flower and white Bottom.
 17. Lesser wild Poppy, or Dwarf Poppy.
 18. Welsh, or yellow wild bastard Poppy.
- As many of the Seeds, of these, as have come to my Hands, upon examining them with my Microscope, appear to have all the same Features and Marks with that which I have described below; those were of three different Colours, 1. a little black Seed, 2. a brownish Seed of the same size, and a yellow Seed. The Brown is called in the Seed-shops the **Double striped**, and the Yellow is called the **Dwarf Poppy**.
- There is another Seed sold in Seed-shops, and by the Corn-Chandlers, commonly called **Maw-Seed**, which is of a Cineritious or Ash-colour, of the same Size with the

the former ; and which I find has the very same Shape, Marks, and Characters with all the other **Poppy** Seeds, and differs not from the rest in its agreeable Taste. This is thought by some to be the Seed of the *Papaver spinosum*, C. B. and to have a purging Quality ; but in Mr. Miller's Character of the *Papaver spinosum* or *Argemone*, it appears to have globular black Seeds † ; and where he speaks of the **Poppy**, he says, the **Haw-
Seeds** are the Produce of the **black Poppy**, which grows wild in divers parts of *England*.

No Author acknowledges more than this one Species of *Argemone*, except *Plin.* lib. xxv. c. viii. who recounts three kinds, and approves only of that which has a Root smelling like Frankincense : And *Gerard*, who mentions two Species, viz. the *Argemone capitula torulo*, and *Argemone capitula longo*, the Virtues of both which he makes alike, and takes from *Dioscorides* ; and yet if we consider his Description of their Flowers, one would be apt to think he has only described some of our little **wild Poppies**, instead of the *Papaver spinosum* of C. B.

It is also thought that this **Poppy** produces the *Gambogium*, which Notion probably arises from the Words of *Dioscorides*, who speaking of the Plant, says, it produces an acrimonious yellow Juice. However these things be, we shall proceed to our Description of the **white Poppy Seed**, which, as I said above, answers to every true Seed of that Family in all respects, except the Colour.

† *Parkinson* and *Baubine* say, the Seeds are globular and black, and several times bigger than those of Poppies.

MICROSCOPICAL Description.

This is a little yellowish white Seed exactly resembling, in shape, a Sheep's Kidney; having a yellow Place about the hollow Part, which is its *Umbilicus*, analogous to the hollow Part of the Kidney into which the Blood-Vessels (*Emulgents*) enter.

If it be view'd on the back or convex Part concealing the Hollow, it is exactly shaped like an Egg, having one End somewhat rounder than the other.

All over its Surface it has superficial Cells, form'd by Ridges that rise from the Surface, which are some *Hep- tagons*, some *Pentagons*, but for the most part *Hexagons*, tho' not precisely of equal sides, and the Bottoms of these Cells seem to be very porous.

The Seeds seem very light and springy, as a gentle Blast of one's Breath is capable of blowing them away, or a Touch of any thing of making them roll a considerable Way; whence I was inclin'd to believe they contained nothing solid. And as they are very small, there was no way for finding what was their Contents, but bruising them, and thereby bursting their foresaid cellular Coat, which caused the Table, upon which I pressed them, and the Spatula to be wet. I then try'd a single Seed, which when burst, a Proportion of the same Moisture appear'd, and upon viewing some of the burst Seeds with a considerable Magnifier, part of the Fluid, remaining at the Edges of the Rupture, seem'd a crystalline gelatinous Fluid.

Upon

Upon chewing a Pugil of the Seeds at a time, they seem sweetish and not disagreeable to the Taste, having no Smell; and as to their Size, they are not above a twenty-fourth part of an Inch long, and about a thirtieth part broad or thick.

V I R T U E S.

These are said by *Galen* to have been mixed with Bread, and have frequently been of use in the Confectionary; and as to the Medicinal use of these in general, they are prescribed as Coolers and Narcotic, in the different Forms to be found in the Apothecarys Shops, which are more elegant than some the Ancients had in use, who often made Decoctions of their Leaves, &c. for the same Intentions. Cataplasms of the green Tops with Barley Meal and Hog's Grease, were apply'd to cool Erysipelatous Tumours; and it is said, that Poppy Oil made by Expression is agreeable to eat with Bread, without any sensible ill Effect.

T A B. I. Fig. 11, 12, 13.

ANGELICA SEED.

SO called from *Angelus*, an Angel: because it was esteemed as a Medicine endowed with many excellent Qualities, and particularly against pestilential Diseases. *Schrod.*

SYNONYMA.

Angelica, *Chab.* 400. *Angela sativa*, *C. B. Pin.* 155.
J. B. iii. 140. *Ger.* 846. *Emac.* 999. *Park. Theat.* 939.
Raii Hist. i. 434. *Synop.* iii. 208. *Boerb. Ind. A.* 53.
Hist. Oxon. iii. 280. *Imperatoria sativa*, *Tourn. Inst.* 317.

CHARACTER of Plant and Flower.

Tournefort mentions ten Species of this Plant, but we shall have no regard here to any except this *Angelica sativa*, whose Seed we are to describe. It has large Leaves, subdivided into two or three Lobes, somewhat indented about the Edges; the Stalks are thick and tubular, and rise many Feet high, being jointed, from which Arms or Branches arise, which bear Tufts of whitish Flowers like *Fennel* or *Dill*. The Root is thick and large, having an Oily Juice, and the whole Plant has a most delightful Smell.

Miller. It hath winged Leaves, which are divided into larger Segments; the Stalks are hollow and jointed, the Flowers (which grow in an *Umbel* upon the Tops of the Stalks) consist of five Leaves, and are succeeded by two large channel'd Seeds. They flower in *July* and *August*, and the Seeds soon succeed.

MICROSCOPICAL Observations.

The Form of this Seed is an irregular Oval in its Outline, and has some resemblance to a small Species of the Land Tortoise; being convex on one Side, and flat on the other. On the Back, *Fig. 11.* or convex Side, there are
 three

three Ridges, which come pretty close together at their Extremities, but are farther asunder at the Center ; the Surface is uneven, tho' smooth.

The Belly or flat Surface, *Fig. 12.* is also uneven, having a longitudinal *Sulcus* thro' its middle, whereby it is divided into two Lobes ; this *Sulcus* has two *Labia*, which rise into Ridges that end in a fungous Aperture somewhat ragged, which is the *Umbilicus* of this Seed. The other Extremity is the Part into which the Stem is inserted, and answers to a *Theca* on the *Nucleus* of this Seed.

When the two Lobes are pulled asunder, the *Nucleus*, *Fig. 13.* appears, which is an elliptical Grain of a brown Olive-colour, and uniform to the naked Eye ; but with the Microscope appears striated, and interspersed with Ridges and Lumps of an Amber-colour'd *Gum*, which makes it look like a very beautiful candy'd Substance, having a most fragrant Smell. One Side of this *Nucleus* is more convex than the other ; on the flatter Side there is a white Line, which is no more than the *Theca*, or Receptacle for the *Stilus*, running up from the Stem, and is of a membranous Contexture ; this Side is more depressed than the other.

It tastes very strong though pleasant, with some Pungency on the Tongue, and its *Parenchyma* is pretty compact.

There is a great Disparity between these Seeds as to their Size, some being near a fourth of an Inch long, whilst

whilst others are not an eighth; and the *Nucleus*, being somewhat less than its Case, is always in proportion to it, whether big or little.

V I R T U E S.

Angelica, as was said before, is good against pestilential Disorders, is counted a great Deobstruent in Obstructions of the Liver, and in feminine Cases; and by its attenuating Quality, would be a proper Ingredient among Pectorals to promote Expectoration. The green Stalks candy'd make a fine and wholesome Sweetmeat, and from my Observation of the Seed and its aromatic Gum, I cannot but imagine the *Nuclei*, which are easily divested of their Husk, immediately encrusted like Caraways, before the Gum flies off, would make one of the most delicious and wholesome Sweetmeats in the World.

T A B. I. Fig. 14.

F E N U G R E E K S E E D.

FÆNUM *Græcum*, so called, because it resembles Hay when dry, and the Seeds were brought from Greece. *Theophrastus* called this Plant *Beuceras*, from Βῆς and Κέρας, *Dr's Horn*, because the Pod which contains the Seed is like a Horn; and it was also called *Goat's Horn* for the same Reason. The Greek Name of *Dioscorides* is Τῆλις.

SYNO-

SYNONYMA.

Fœnum Græcum, *Offic. Ger.* 1026. *Emac.* 1196. *Raii Hist.* i. 954. *Chab.* 167. Fœnum Græcum sativum, *C. B. Pin.* 348. *Park. Theat.* 1096. *Hist. Oxon.* ii. 166. *Rup. Flor. Jen.* 213. *Tourn. Inst.* 409. *Elem. Bot.* 326. *Boerb. Ind. A.* ii. 32. Fœnugræcum, *J. B.* ii. 365.

CHARACTER of Plant and Flower.

This Plant has a long slender Stalk, which is hollow, and divided into several small Branches. The Leaves are like a Species of **Crescil**, but a little smaller and round, being green on the upper side, and Ash-colour'd on the under; among which, there grow small white Flowers, which are succeeded by Pods of a longish Form, which some measure resembles a Horn.

Miller. " It hath a papilionaceous Flower, out of
" whose Impalement rises the Pointal, which after-
" wards becomes a Pod somewhat plain, shaped like a
" Horn, and full of Seeds, for the most part Rhomboid
" or Kidney-shaped." It is cultivated in *France* and *Italy*. *Johnson* from *Columella* says, it has two Seasons for sowing, the one in *September*, that it may be ready for Fodder against Winter; the other in the End of *January* or Beginning of *February*. *Mr. Miller* says, they may be propagated here, by sowing their Seeds in *February* or *March*, upon a light Soil, and in an open Exposure; but says also, it is too uncertain a Crop to cultivate here, being very apt to miscarry in cold wet Summers.

MICRO-

MICROSCOPICAL *Description.*

The side-view of this Seed most generally forms an irregular Oblong, tho' some Seeds are longer than others; it resembles in some measure the Cuboidal Bone of the *Tarsus*, and may be said to consist of two Sides, both which are convex, and two Edges, a fore and back; the latter is thick and round, the former more sharp. From this sharper Edge, about the third of its length from the Extremity, there is a Notch, from which a *Sulcus* runs obliquely inward towards the other Extremity, but does not reach it quite; this *Sulcus* gave occasion to a noted Author to call it "*Linea ab angulo ad angulum depressa*," which in Fact is not so, as every one may be witness of, without a Microscope; which Notch is the Place of its *Umbilicus*.

This Seed has several little Depressions on its Surface, especially at the two Ends, which are sufficiently depressed to form Cavities, tho' not very deep; and the Surface of the intire Seed appears all over granulated, when view'd with the *Microscope*, and porous.

These Seeds are of a *Spanish* Snuff-colour, and are full of a *Parenchyma*, which tastes not much unlike a dry Horse-Bean, a little bitter, and smells somewhat unpleasantly. Its Substance cuts like that of a **white Pea**, and it seems in general of the Pulse kind. The natural Dimension of this Seed is one eighth part of an Inch in length, and about the same in breadth.

V I R T U E S.

The Plant and Seeds are emollient, therefore the Seeds are used chiefly in Cataplasms, for digesting and suppuration; and in Clysters are said by *Dioscorides* to do service in a *Tenesmus*, by obtunding acrimonious Humours falling on the *Sphincter*.

T A B. I. Fig. 15, 16.

BLESSED or HOLY THISTLE SEED.

CARDUUS *benedictus*, so called from its excellent Qualities, in the Opinions of the Physicians of all Ages.

S Y N O N Y M A.

Carduus benedictus, *Offic.* Ƴ. B. iii. 77. *Glab.* 358. *Ger.* 1008. *Emac.* 1171. *Park. Parad.* 530. *Raii Hist.* i. 303. Carduus luteus procumbens, fudorificus & amarus, *Hist. Oxon.* iii. 160. Cnicus Sylvestris, five Carduus Benedictus, *C. B.* 378. *Tourn. Inst.* 450. *Boerb. Ind. A.* 140. Carduo cnicus sylvestris hirsutior, *Pluk. Almag.* 82.

C H A R A C T E R of Plant and Flower.

The Stalks of this Plant are round and pliable, which being divided into Branches, lye on the Ground; the Leaves are jagged and prickly, as are also the Seeds; the Flower is yellow, which is soon succeeded by the Seed.

F

It

It flowers in *June* and *July*. The intire Plant is covered with a soft Down.

Ruellus confounded this Plant with the *Atractylis*, when he asserted that the *Carduus benedictus*, being cut or broken, let out a Liquor like Blood; this is blamed by *Matthiolum*, who says, the red Effusion is only proper to the *Atractylis*. It is properly enough classed under the Name of *Cnicus*, from its thorny Structure. *Cnicus* probably is derived from *Κνῆω*, *scindo*, to cut; or from *Κνῖθω*, *scalpo*, *frico*, *prurire facio*, *titillo*, to scratch, rub, or cause an Itching, or irritate; which Sensations are easily excited by the Prickles of this Plant. *Κνῆω* has the same Signification.

MICROSCOPICAL Description.

The Body of this Seed is about twice as long as it is thick, is round, and shaped much like a Nine-pin, only instead of being small at the upper End, it has a Stricture from whence arises a beautiful Crown of ten Angles or Points, out of which come also ten *Aristæ* or *Spiculæ* like Ivory, about the Length of the Body of the Seed, running taper upward, and set round in an uniform Manner. Within the Circle of these long Spikes, there are ten more, which are but very short, and of the same Colour and Consistence with the others. When these are all plucked off, the Vestiges of the Circles they form, appear in the upper Surface of the Crown (*a*); in the Middle of which a little Process arises, but very superficially. That part which appears circular is white, and the

the rest of this Surface, of the *Corona*, of the same Colour with the rest of the Body of the Seed, which is a sort of Olive-colour.

The Body of the Seed is of the *fulcated* kind, and looks exactly like a fluted Pillar, and the Surface shines as if varnished with some Gummy Substance.

At the lower or small end of this Seed, there is an Opening, reaching up above a third of the Length of the Body of the Seed, which discovers a white Root, shaped like a Cone at the Bottom, and rising thicker by degrees till it divides into three Limbs; these run taper upwards till they are lost in the *Parenchyma* of the Seed, which at the Place of their Entrance appears somewhat fungous, but is more compact and clammy through its Substance.

The Taste of this Seed is bitter, and it has an Oily Smell. The Length of the Body is more than two eighths of an Inch, and the *Aristæ* exactly the same Length. The *Corona* is its *Umbilicus*.

V I R T U E S.

This Plant has been held in great Esteem amongst the Ancients for its Virtues; *Matthiolus* is particularly fond of it, and has the following Account of its Excellencies: Not only, says he, the *Italians*, but other Nations hold it in great Esteem for its Efficacy against pestilential Diseases, for expelling Poisons taken inwardly, and curing the Stings and Bites of venomous Creatures. It is also good against Agues and Fevers, taken either by way of Decoction,

coction, or its distilled Water, or in Powder. He mentions it as particularly good for Convulsions in Children, and its Decoction in Wine as greatly efficacious in Colics, and Pains and Disorders of the Kidneys; that it is a good Diaphoretic, and heals old inveterate Ulcers apply'd externally. In short, it is a valuable Medicine, and I cannot but think it strange, so excellent a one as I know it to be from Experience, should be so much neglected in the present Practice.

T A B. II. Fig. I.

P L A N T A I N S E E D.

FROM *Plantago* the *Latin* Name, the *Greeks* call it Ἀρνόγλωσσον, from its likeness to a Lamb's Tongue. The *Latin* Name *Plantago* seems to have been given it for its Excellency, derived from *Planta* the common Appellation, or from *Planta* the Soal of the Foot, which treads it, or which in some measure it resembles.

S Y N O N Y M A.

Plantago vulgaris septinervia, Offic. *Plantago latifolia vulgaris, Park. Theat.* 493. *Hist. Oxon.* iii. 258. *Raii Hist.* i. 876. *Synop.* iii. 314. *Plantago latifol. Ger.* 338. *Emac.* 419. *Mer. Pin.* 95. *Plantago latifolia sinuata, C. B. Pin.* 189. *Boerb. Ind. A.* ii. 100. *Dill. Cat. Giff.* 113. *Buxb.* 262. *Plantago major latifolia vulgaris, Merc. Bot.*

TAB. I.



J. B. I.

Bot.

Bot. i. 59. Phyt. Brit. 95. Plantago major folio glabro, non laciniato ut plurimum, J. B. iii. 502. Plantago major vulgaris, folio glabro, non laciniato, Chab. 497.

CHARACTER of Plant and Flower.

Altho' *Tournefort* recounts above thirty Species of this Plant, the Ancients were of Opinion that there were only two, the greater and lesser; yet *Matthiolum* counts that a Species of this Plant, which was vulgarly called *Lanceola*, a Lancet, from its shape. In some parts of *Italy* they called it *Centinerbia*, a Corruption of the Word *Quinquenervia*; this is *Matthiolum*'s second Species, who distinguishes them thus: The greater Plantain is called *Septinervia*, because its Leaves, which are largest, have seven Nerves or Ribs. The Second or *Media* is called *Quinquenervia*, because five Ribs appear upon its Leaves; and the least is called *Trinervia*, because its Leaves, which are a little hoary, have only three Ribs.

Plantain has a monopetalous Flower, for the most part quadripartite, from the Bottom of which arises the *Pistillum* surrounded with long *Stamina*; these are succeeded by elliptical Seed-Vessels, which, when very ripe, split horizontally, and the Seeds spring out. These parts of the Seed-Vessels, when together, are divided by a *Septum* into two *Loculi*, which contain the Seed in each, and which Mr. Ray calls *Puliciforme*. It flowers in May, June, and July.

MICROSCOPICAL Description.

Indeed, by the imperfect View we have of this Seed from its Minuteness, it may seem like a Flea, as any small Speck would, if a little oblong: Yet its form is not constant, that is, there are scarce two of them precisely alike, some being perfectly elliptical, some with blunt Angles, and some approaching a *Spheroid*. They have a whitish Mark on one Side, which is the *Umbilicus* of the Seed, from whence the first Rudiments of the Plant spring, and the Surface is entirely granulated over, and has a general Appearance like some kinds of Plumb-Stones; the Surface also shines a little, as if oiled or moist, and their Colour is brown. Their Taste is somewhat insipid, and when broken or chew'd, they have a faint Smell; and one of the Seeds cut transversely appears to have the Shell or Covering pretty strong in proportion to its Size, which contains a *Parenchyma* that is very porous and succulent. It is about a sixteenth part of an Inch long, and a twenty-second broad.

V I R T U E S.

The Roots, Leaves, and Seeds were formerly in use in Medicine, and were Ingredients in several Compositions as Coolers and Restringtons, especially among the *Galenists*, who thought this Plant second to none in those Intentions.

In Country Places the People make great use of it, sometimes applying the Leaves to Burns or Scalds, and fresh Wounds; at others, bruising the Leaves with some
unctuous

unctuous Matter, and applying them to Sores and Ulcers, and that with Success. Whatsoever slight Opinion of simple distill'd Waters may reign of late, some of them appear to retain the Virtues of the Plant, and are, at least, a proper Vehicle for more efficacious Medicines of the same Intention; and therefore some of every Intention ought to be prepared for that Purpose. Among others this is a good Vehicle as a Restricting and Agglutinant, and retains a great part of its Virtues even in that Shape, being in the whole an excellent Plant against all Fluxes of Blood whatsoever.

T A B. II. Fig. 2, 3.

STAVES-ACRE SEED.

STAPHIS *Agria*, from the Greek Σταφίς, *Uva passa*, a large Grape or Vine, and ἀγρία wild, because of its Likeness to that Tree. It is also called *Pedicularis*, or **Louse-wort**, from its Efficacy in destroying that kind of Vermin; and *Tournefort* has it under the Name of *Delphinium*, from, says he, the form of its Flower not expanded, which resembles the Dolphin, as it is drawn by Painters; or because the Leaf has some resemblance to the Figure of a Dolphin, in the Opinion of the Ancients.

SYNONYMA.

Staphis agria, *Offic. Ger.* 398. *Emac.* 495. *Raii Hist.* i. 705. *Park. Theat.* 222. *J. B.* iii. 641. *C. B. Pin.* 324. *Hist. Oxon.* iii. 461. *Staphis agria Pedicularia*, *Chab.* 528. *Delphinium plantani folio*, *staphis agria dictum*, *Tourn. Inst.* 428. *Elem. Bot.* 379. *Boerb. Ind.* 301. *Aconitum urens Ricini fere foliis*, *flore cæruleo magno*, *staphis agria dicta*, *Pluk. Almag.* 357.

CHARACTER of Plant and Flower.

This Plant has strait soft Stalks, which are brown, according to *Gerard Emac.* but black according to *Dioscorides*, bearing Leaves divided into Sections, like those of the wild Vine; its Flower, *Dioscorides* says, is like that of the *Glastum* or ~~wood~~, or as *Gerard* has it, growing like ~~Monkshood~~ upon short Stems of a blue Colour; which are succeeded by welshed Husks like those of ~~wolfsbane~~, which contain an angular Seed. *Gerard* says, altho' it is preserved with great Difficulty in cold Countries, he has raised it by covering it with Fern to keep it from the *March* cold Winds, which he says are more pernicious, to Plants from warm Climes, than Frost.

Mr. *Miller* makes this Plant his third sort of *Delphinium* or *Larkspur*, of which we shall speak in its Place: his Character of it is, "that it is a large handsome
" Plant, and produces fair large Flowers. The Seeds of this should be sown in a light sandy Soil, and a warm Situation, soon after it is ripe; for if it be kept until Spring, it very often miscarries. The second Year after sowing,
it

it flowers, and soon after perfects its Seed and dies. This Plant is at present very uncommon in *England*, and only to be found in some curious Gardens of Plants.

MICROSCOPICAL Description.

The Seeds of this Plant are rough and angular, inclining to a Triangle, altho' imperfectly so. They may be considered as having a *Basis* and *Apex*; the *Basis* is thick and clumsy, and the *Apex* runs to an angular Point, which Point is the *Umbilicus* of the Seed, out of which its first Rudiments arise; it also has a convex, and a plane or concave Side; the former, *Fig. 3.* is rough, by reason of its being covered all over with porous Cells, the Ridges of which are also depressed or indented with rough Pores, and granulated as if stuck full of Sand. The concave Surface, *Fig. 2.* is also rough, but not in the same Manner, and so are the Sides, which have a little Flatness; these also are porous and sandy, and, before the Microscope, shine, and are coloured like dirty brown Sugar-candy. The concave Surface, notwithstanding the Roughness, has one longitudinal Ridge, and sometimes more, running from the *Basis* to the *Apex*, which has the same granulated Surface with the rest.

It contains a *Parenchyma*, which is of a yellowish grey Colour, and is moist and succulent: and immediately, upon being apply'd to the Tongue, produces a most nauseous pungent Bitterness, which is scarce to be born; and the Smell has so great a share in this disagreeable Flavour,

vour, when the Seed is broken, that without laying one's Tongue to it, its Taste may very well be judged.

This Seed is, in its natural Size, about two eighths of an Inch long from its *Basis* to the *Apex*, and near as broad; however, some are broader in proportion to their Length than others, and they are one eighth of an Inch thick.

V I R T U E S.

The Ancients, as well as Moderns, knew the Violence of these Seeds in their Operations; and yet *Dioscorides* ventured to give fifteen Grains in a convenient Vehicle, in order to discharge thick tough Humours by Vomit; but advised that the Patient should continually walk and drink largely, for fear of being strangled, and to assuage the Heat they induce to the Throat and Jaws: So that it is the most violent *Emetic* that may be, and therefore wisely avoided in Medicine for internal use; yet in other Respects it may be of service. *Dioscorides* ordered it powder'd, and mixed with Oil for the *Pthiriasis* and Itch. The Seeds being chew'd, draw much Rheum from the Jaws and Head, and are therefore said to ease the Pains of the Gums and Teeth. Its chief use is to destroy Vermin that infest Children.

T A B.

T A B. II. Fig. 4.

S O R R E L S E E D.

ACETOSA, from *Acetum*, Vinegar, because of its acid Taste; *Sorrel* from the Saxon Word *sur*, Sour. The Greeks called it *Οξυς*, *quod* *ὀξύς* *sit*, for the same Reason.

SYNONYMA.

Acetosa vulgaris, oxalis, Offic. *Acetosa vulgaris, Park. Theat.* 742. *Raii Hist.* i. 178. *Acetosa pratensis, C. B.* 114. *Hist. Oxon.* ii. 582. *Tourn. Inst.* 502. *Boerb. Ind. A.* ii. 85. *Dill. Cat.* 67. *Buxb.* 4. *Acetosa major* *vulgatissima, Schw.* 5. *Acetosa vulgaris, sive Rumex Campoferinus, Munt. Herb. Brit.* 221. *Oxalis seu acetosa, Ger.* 319. *Emac.* 396. *Park. Parad.* 486. *Chab.* 311. *Oxalis vulgaris folio longo, J. B.* ii. 989. *Lapathum Acetosum vulgare, Raii Synop.* iii. 56.

CHARACTER of Plant and Flower.

Dioscorides makes this a Species of the *Λάπαθον*, *Lapathum*, and calls it *Rumex*; and *Matthiolum* says, tho' that Author was silent about it, there are two kinds of what the Greeks call *Oxalis*, having their Seed exactly alike, only one bigger than the other, as the Leaves of one of these are larger, the other narrower, like a Spear or Dart. Now as *Dioscorides* calls his fourth kind of

Lapathum Oxalida and *Anaxarida*, or *Lapathon*, one would almost doubt whether he meant the *Acetosa*; and yet the further Character he gives of it, does not seem much to disagree with that of this Plant: *Caule non magno, semine subacuto, rubente, acri, in caule & agnatis appendicibus, emicante.* Gerard thinks he absolutely meant the common *Sorrel*, and describes it thus: The Leaves of this are thinner, tenderer, and more unctuous than those of the *Lapathum acutum*, broader next the Stem, horned and crested like Spinage and *Attriplex*. The Stalk is much streaked, reddish, and full of Juice; the Root is yellow and fibrous, the Seed sharp, growing in Chaffy Husks like the other Docks.

Miller says, "this Plant agrees with the Dock in all its Characters, and only differs in having an acid Taste." This Author has something remarkable about that Species of the *Sorrel*; he mentions three kinds: the first is the *Acetosa pratensis* C. B. the common or meadow *Sorrel*; the others are the Northern barren *Sorrel*, and the French *Sorrel*. The first of these, tho' but small in the Fields, yet when sown in Gardens, will produce large fair Leaves, and is the same sort which is commonly cultivated in Gardens. It must be sown early in the Spring in a shady moist Border, and if the Plants are afterwards planted out in another shady Border, four or six Inches square, it will produce larger Leaves and continue longer. This is the common *Sorrel* used in Medicine; but the Northern barren *Sorrel* is prefer'd to it in the Kitchen-Garden, it rarely running to Seed,
but

but is increased by parting the Roots either in Spring or Autumn, and is fit for use all the Year round.

The round-leav'd or *French* Sorrel is the most grateful Acid, and is preferred to the other two Sorts for Kitchen use ; it is also a Medicinal Plant, and should not be wanting in any good Garden.

It flowers in *Summer* and Autumn, as other *Docks* do.

MICROSCOPICAL Description.

These Seeds are of a Rhomboidal Figure, having both Ends sharp, but the lateral Angles of the *Rhombus* as it were rounded off. Each Seed consists of three Surfaces, which are exceedingly smooth and polished, of a dark Chesnut-Colour, and which, if there was a transverse Section made, constitute the Sides of an equilateral Triangle, whose Angles, when they meet, project a little beyond their Closure, and so form three longitudinal Ridges from one End to the other ; so that if one brings any two of these Ridges in view, they form the *Rhombus* mention'd.

At one End, the Chesnut-colour of the Body of the Seed degenerates gradually into a fine Yellow, which yellow Extremity is the *Umbilicus* of this Seed. They differ from each other but very little in size, which most other Seeds do, yet as to their Length some are a little longer than others.

They contain within their Covering a whitish *Parenchyma*, which has some Juice or Moisture, and their Taste is somewhat nauseous, and much like a Drop of Lemon-Juice

Juice diluted with so much Water, as would almost obliterate the Acid. It has a faint disagreeable Smell, having a great Affinity with the Taste; and the natural Dimensions of an ordinary Seed are, about one tenth of an Inch long, and about one sixteenth wide. *Tournefort* mentions above thirty Species of this Plant.

V I R T U E S.

Sorrel is a Cooler and Subastringent, from its acid Quality. Many People boil Sorrel-Leaves in Milk, which turns it to Curds and Whey; the latter is given plentifully to drink in Fevers, and is of great Service as a Cooler and Allayer of Thirst; but this is the *Acetosa arvensis lanceolata*, C. B. which is common upon dry Ditches in Country Places, especially in Sheep-Walks. As to its external Application, I have known it (the Garden or Field-Sorrel) boiled in Milk and then applied by way of Cataplasim to *Ulcers* on both Legs of a young Person, which cured them after many other things were try'd in vain. It is also good drank as above, in Whey, to create an Appetite in weak Stomachs; but it is best after gently cleansing the Stomach by Vomit; for if it be so foul as to occasion sour and bitter *Ructus*'s, then the use of the Sorrel would rather increase than diminish the Evil. But besides the Medicinal uses, this Plant, especially three or four Species of it, which we have mentioned already, is a most grateful Ingredient in Sallads and Soups; and therefore much in use in *France*, altho' hardly regarded with us for such Purposes.

T A B.

T A B. II. Fig. 5, 6.

B R O O M S E E D.

GENISTA, of *Genu*, the Knee, from its Flexibility, or because this Plant was esteemed Good for some kinds of Diseases of that part. As the Seeds of the *Spartium* do not differ from those of this Plant, we shall mention its Etymology here. It is called by that Name, of *Sparum*, a little Dart or Arrow, which is deriv'd from *Σπείρω*, *spargo*, to scatter, because the Seeds are said to scatter and sow themselves, without the Trouble of Cultivation.

S Y N O N Y M A.

Genista, *Offic.* *Ger.* 1130. *Emac.* 1311. *Chab.* 83. *Mer. Pin.* 44. Genista vulgaris, *Mer. Bot.* i. 37. *Phyt. Brit.* 45. Genista vulgaris & scoparia, *Park. Theat.* 228. Genista angulosa & scoparia, *Johns. Dendr.* 372. Genista angulosa trifolia, *J. B.* i. 388. *Raii Hist.* ii. 1723. *Synop.* iii. 474. Cytiso-Genista scoparia vulgaris, flore luteo, *Tourn. Inst.* 649. *Boerb. Ind. A.* ii. 27. *Cytisus scoparius vulgaris*, *Elem. Bot.* 508.

CHARACTER of Plant and Flower.

Broom is a shrubby Plant, having woody Branches, from which arise green, slender, flexible and tough Twigs, subdivided into still smaller; the Leaves are small and green, the Flowers yellow, which are succeeded by black
 flattish

flattish Pods like those of the Vetch, which contain a Seed of a brown Colour, and a Lentil Form, but somewhat less.

There seems a great Difference among some Authors concerning the **common Broom** and the *Spartium*, for they are confounded sometimes, so that it is hard to distinguish certainly what is meant by either. *Dioscorides* describes the *Spartium* thus (taken from *Matthioli*'s Comments): "*Spartion frutex est longus ferens vir-*
gas, sine foliis, firmas, fractu contumaces, quibus
vites vinciuntur; semen lenticulæ in folliculis Phasio-
lorum modo, nascens, florem ut albæ violæ luteum." *Matthioli*, in his Comment upon these Words, confesses he was greatly of Opinion, that they who made any difference between the *Genista* and *Spartium*, were much deceived; because of their great Likeness to each other in Form and Virtues, and especially because he found *Pliny* in some doubt about it. But when he came to converse with one *Petrus Cannizerus*, a *Spanish* Physician, he found it reasonable to change his Opinion; this *Cannizerus* told him, he saw in *Spain* great Quantities of both these growing, and found they differed in this Respect: That the *Spartium* of *Dioscorides* was without Leaves, and had the Flowers like a white Violet, whereas the *Genista* had Leaves with yellow Flowers. He then describes the *Genista* from *Mesue* thus: "*Genista arbor est montana, e*
cujus caudice quamplurimæ funduntur virgæ, rectæ,
flexiles, fractu contumaces, quibus vites & alia ligan-
tur: flores edit flavos, lunari figura, e quibus siliquæ
prode-

“ *prodeunt Ervi magnitudine ; & semina in eis lentisimilia*
 “ *intervallis distincta.* That is, *Genista* is a Mountain-
 Shrub, from whose Stalk arise several strait, flexible, tough
 Twigs, which produce yellow Flowers of a Lunar form,
 from which, Pods are produced like those of the *Uetch*.

This agrees with *Gerard's* Description, and *Tournefort's*
 Figure, and is therefore probably the true **common Broom**;
 and as *Dioscorides's Spartium* has lenticular Seeds in Pods,
 growing in the manner of Kidney-Beans, and yellow
 Flowers, altho' he compares them to those of the **white**
Violet; we cannot but imagine he intended describing
 what we take to be the *Genista*, rather than the *Sparti-*
um, notwithstanding his naming it so; because *Tournefort*
 and *Mr. Miller* describe the latter as having a short Pod,
 containing but one Seed of a reni-form kind, and much
 larger than the **Broom-Seed**. Now because we would
 willingly, here, clear up this Doubt, and as the Words of
 these two Authors are short, the Reader may think them
 not unnecessary here. *Tournefort* says: “ *Spartium est*
 “ *plantæ genus, flore papilionaceo, cujus pistillum, quod sur-*
 “ *git e calice, abit deinde in siliquam brevem, subrotundam,*
 “ *turgidulam, semine fætam ut plurimum reniformi.*

Mr. Miller's Description agrees so well with the fore-
 going, that a particular Translation of it is unnecessary.
 His Words are: “ It hath a papilionaceous Flower, whose
 “ Pointal, which rises from the Flower-cup, afterwards
 “ becomes a short, roundish, swelling Pod, containing for
 “ the most part one Kidney-shaped Seed in each.”
 This Author gives two more Species of the *Spartium*, all

which he calls *Spanish Broom*, and which *Tournefort* also has, together with two more. The first is, the *Spartium alterum Monospermum, semine reni simile*, C. B. the second is the *Spartium tertium flore albo*, C. B. the third *Spartium Americanum portulacæ foliis aculeatum, Ebeni materiæ*, Plum. and the fourth is the *Spartium Americanum scandens, citri foliis, floribus albis ad nodos confertim nascentibus*, Plum.

Thus is the *Spartium* distinguished from the *Genista* by this Particular chiefly, that the former has only one Seed in each Pod, of a Kidney-shape, and the latter many Seeds in each Pod of a lenticular Shape. If this be the Case, and the former is the *Spanish Broom*, then *Gerard* and *Dale* have both mistaken the Matter, and described a Species of the *Genista* under that Name in its stead. This will appear in the Words of the former. “ The
 “ *Spanish Broom* hath likewise woody Stems, from
 “ whence grow up slender pliant Twigs, which are bare
 “ and naked without Leaves, or, at least, having but few
 “ small Leaves, set here and there far distant from each
 “ other, with yellow Flowers not much unlike the
 “ Flowers of common Broom, but greater; which turn
 “ into small long Cods, wherein is contained brown and
 “ flat Seeds.” He says, the Roots are hard and woody, which he also says of the *Genista*. The latter has ranged *Synonyma* under the Name *Spartium* from different Authors, that would better agree with the *Genista*, both with respect to the Plant in general, and particularly the Seed; for they mention the *Genista juncea*, or the
Genista

Genista Hispanica, floribus luteis amplis, seminibus lenti-
similibus. These Plants flower in May, June and
July.

MICROSCOPICAL Description.

The Broom-Seeds have a little Variety among them, some approaching to the form of *Lenses*, Fig. 5. altho' none of them are perfectly round; and others of the same Seed come nearer the Figure of an Olive, Fig. 6. They differ also in Colour, some of both forms being of a fine Olive Colour, and others a reddish Brown. Those, of the Seeds, which in some measure resemble the lenticular Figure, are somewhat depressed or flattish on both Surfaces, but the Olive-form'd Seeds have no such Depression, and therefore are round and long.

One Extremity is round and smooth of both these Seeds, and at the other a *Corona*(a) arises of a bulbous Contexture and very white, being a little rough, and having an Aperture at the Top, leading to the *Umbilicus* of the Seed. This *Corona* is form'd of the Membrane that covers the *Nucleus* or *Parenchyma*, which, after it has enwrapped it all round, rises out of the Hole, or *Umbilicus* of the Shell, and so forms that Crown. The Surface of the Shell of the Seed is smooth, but porous; the *Parenchyma*, of a yellowish white, is bitter, and somewhat nauseous to the Taste, having little or no Smell: and as to their natural Dimensions, a middling Grain is somewhat more than one eighth of an Inch long including the *Corona*, and two thirds of its Length broad; but the Olive-shaped Seeds are not above half as broad as they are long.

V I R T U E S.

The Plant and Seeds are of an aperitive and diuretic Quality, and are therefore of use in Obstructions of the Spleen and Liver, and to scour the Kidneys and Bladder of glairous or fabulous Matter. The Seeds and Flowers will vomit, and purge by Stool, *Dioscorides* says, with some Violence. In short, it is an excellent Medicine where these Intentions are to be answer'd. The young Buds or little Flowers have been pickled, and make an agreeable Sauce to assist an Appetite.

T A B. II. Fig. 7.

R U T E S E E D.

THE *Greeks* called this Plant Πύρανον, the *Latins* *Ruta*, from πύω, *trabo*, to draw, or ῥυομαι, *tueor, libero*, to defend, from its being esteemed a Preservative against infectious Distempers; or because the Plant, bruised and apply'd to the Bites of venomous Creatures, was thought efficacious in drawing or sucking out the Poison.

S Y N O N Y M A.

Ruta, Offic. *Ruta hortensis*, *Ger.* 1070. *Emac.* 1255. *Ruta hortensis major*, *Park. Theat.* 132. *Ruta hortensis latifolia*, *C. B. Pin.* 336. *Tourn. Inst.* 257. *Elem. Bot.* 224. *Rup. flor. Jen.* 71. *Buxb.* 288. *Ruta hortensis major*

major latifolia, *Hist. Oxon.* ii. 507. *Boerb. Ind. A.* 260.
 Ruta fativa vel hortensis *J. B.* iii. 197. *Raii Hist.* i. 874.

CHARACTER of Plant and Flower.

Garden Rue is a shrubby Plant very full of Branches, growing pretty high, to about a Yard more or less, and sometimes higher. The Stalks are covered with a whitish Bark, the Branches are more green; the Leaves are divided into Wings, about which grow other lesser Leaves something broad, more long than round, smooth, and somewhat flat, of a greyish or greenish blue Colour. The Flowers are of a pale Yellow, consisting of four little Leaves something hollow, in the Middle of which a little quadrangular Head stands, containing as many little Cells as it hath Angles, and is encompassed about with several little yellow Threads; the Seeds grow in these little Coffers or Cells.

Miller. “ The Flower for the most part consists of
 “ four hollow Leaves, which are placed orbicularly, and
 “ do expand in form of a Rose; out of whose Flower-cup
 “ rises the Pointal, which afterwards becomes a roundish
 “ Fruit, which is generally four corner’d, and composed
 “ of four Cells fixed to an Axis, and full of small angular
 “ Seeds.” *Tournefort’s* Character of this Plant is nearly
 the same, as indeed they are of every other, which I
 take to be a certain Sign of the Justice and Accuracy of
 both. *Mr. Miller* mentions only angular Seeds, whereas
 the former mentions both reni-form and angular, which
 is

is certainly the Case, as will appear in my Description hereafter.

Dioscorides mentions but two Sorts, the **common Rue** and **wild Rue**; and *Matthiolus*, his Commentator, charges certain Monks who wrote upon *Mesue*, with a very great Error, in asserting that there was no difference between the *Androsæmum* or *Hypericum*, and this Plant. On this account he charges them with a threefold Fault; the first is what is mention'd; the second is, that they thought the *Androsæmum* and the *Hypericum* the same, notwithstanding *Dioscorides* treats of them as different Plants; and the third is, that they accused him of having twice made a Description of the *Ruta sylvestris*, which they say had a near Affinity with that of the *Hypericum*.

There are several other Species of the **Rue**, besides the common **wild Rue**. *Tournefort* mentions ten Species of it, and Mr. *Miller* six, which he has seen cultivated in the *English Gardens*. 1. The common *broad-leaved Garden Rue*. 2. The lesser *Garden Rue* with *narrow Leaves*. 3. The lesser *Garden Rue* with narrow Leaves *variegated* with *white*. 4. The *broad-leaved Aleppo Rue*, whose Flower-Leaves are beset with Down. 5. The *Narrow-leaved Aleppo Rue*, whose Flower-Leaves are beset with Down; and 6. The **greater wild Rue**.

There is another Plant described in *Johnson's Gerard*, which he calls *Harmel*, as a *Ruta*, which *Tournefort* gives a Place to as another *Genus*, by the Name of *Harmala*, of which he says, he knew but one Species; viz. the

the *Harmala* Dod. *Pempt.* 121. *Ruta sylvestris flore magno, albo, C. B. Ruta quæ dici solet Harmala, J. B.* This Description of it agrees with that of *Gerard*, who says, “ its Leaves are cut into long Pieces, longer and narrower than those of the wild smelling **Rue**: The Flowers are white; the Fruit is three-square, bigger than that of the planted **Rue**, in which the Seed lieth; the Root is thick, long, and blackish, and in hot Countries has a strong Smell; in cold Countries much weaker.” This Plant flowers in *June*, but in cold Places later.

MICROSCOPICAL Description.

One sort of the Seed of **Rue** (*a*) is Kidney-shaped, but pretty long in proportion to its breadth; it may be consider'd as having a Back or convex Side, and its Belly or concave Side; the former makes, in its Outline, a Sweep of a Circle, and is round and thick all over the Body of the Seed; but the latter, altho' it keeps its Kidney-shape, has a thin Edge, which sinks in a little Way towards the Body of the Seed, and then the Body grows suddenly thick and bulky like a Kidney. Its Surface is very rough and irregular, it is of a dark dry Dirt-Colour, and very porous among the Roughnesses or Granulations.

The other sort (*b*), which is by Mr. *Miller* and *Tournefort* call'd *Angular*, can be compared to nothing so properly as to one of the Divisions of an Apple, or any other globular Body, if it be divided into six equal Parts longitudinally, by three Sections thro' the Center; so that its

Back

Back forms the Sweep of a Circle like the former, which is thick, and its Fore-edge being strait, makes it a kind of Semicircle. The *Umbilicus* of both these is a long white Mark upon the very Edge of the thin Part, and the Roughness is exactly the same in both; but this latter semicircular Seed is of a darker Colour, inclining more to a Black. These Seeds have an insipid Taste, and a faint sort of a Smell. The natural Size of both sorts is equal as to Length, being about the thirteenth part of an Inch long, but the *Reni-form'd* Seed is not so broad as the other, because instead of a strait Line which the semicircular one has, this has a Notch, which makes it reni-form'd, neither is it so broad as long.

V I R T U E S.

No Plant has been held in greater Esteem than this, for its Medicinal Virtues; it was esteem'd, as was before observ'd, a great Resister of Malignity in the Air, when the green Plant is worn about one; boil'd in Vinegar, and apply'd by way of *Fotus* or *Cataplasma*, it is absolutely good to put to the Sides of Pleuritic Patients, in order to discuss the Inflammatory matter from the part; and, with other proper things, there is no better Ingredient can enter into a Cataplasma for discussing Tumors in the *Scrotum*, *Inguen*, or any other part. *Schroder* and *Dioscorides* commend its Seed or Juice drank in Wine, as a Specifick against Poisons of all kinds, and hold it good in all Convulsive Cases. The Juice of this Plant is now in high Esteem with Nurses for the Convulsions of Children;
the

the distill'd Water is a good Vehicle in such Cases for other Medicines. Its Conserve is a good Medicine also for the same Intentions, and deserves to be kept as well as any of the whole Class; and the Leaves eaten green with Bread and Butter is yet more efficacious. It is also good in all Cases commonly called Nervous.

T A B. II. Fig. 8.

BISHOPS-WEED SEED.

CALL'D in Greek *'Αμμι*, the *Latins Ammi*, retaining the same Word. It is also called *Herb-nelliam*.

SYNONYMA.

Ammi vulgare officinar. Ger. 881. Emac. 1036. Raii Hist. i. 455. Ammi vulgatus, Park. Theat. 912. Ammi majus, C. B. Pin. 159. Tourn. Inst. 304. Elem. Bot. 254. Boerb. Ind. A. 57. Ammi vulgare majus, latioribus foliis, semine minus odorato, J. B. iii. 27. Hist. Oxon. iii. 295. Ami, Ammi, Amium, & Ammum, Chab. 285.

CHARACTER of Plant and Flower.

The common *Ammeos* hath round green Stalks with several Branches, and large long Leaves divided into other long narrow Leaves, indented about the Edges, having white Flowers in great Tufts, which bring forth little sharp and bitter Seeds. The Root is white and thready.

The *Ammi* of *Crete*, as described by *Gerard*, has Tufts and Leaves like the *Daucus Creticus*, its Root like the Garden-Carrot, and a hot Seed like *Origanum*. This is what is called the *Ammi Verum* in the Shops, and makes a chief Ingredient in the *Venice-Treacle*. He mentions a third sort, which is a small tender Plant, with small Stalks a Foot and half high, with Leaves like *Dill*, finely indented; it produces Tufts or Rundles that are white, which are succeeded by small grey Seeds of a hot and pungent Taste. This sort, and the first, he cultivated in his Garden, but the *Ammi* of *Crete* he could not, which made him believe something was done to the Seed abroad, in order to prevent its Growth in other Places.

Mr. *Miller*'s Character of it is: "That it is an umbelliferous Plant, with small striated Seeds: The Petals of the Flower are unequal, and shaped like a Heart." He has the three kinds mention'd by *Tournefort*: 1. The greater Bishop's-Weed of *C. B.* 2. The greater Bishop's-weed with fine cut Leaves; and 3. the perennial Bishop's-weed. He adds, "that the second is a Variety from the first, which is accidental from the same Seeds; and the third is an abiding Plant which multiplies very much by its Root."

The Seeds of the *Smallage*, being in all respects so like those of this Plant now described, as scarce to be known from them if laid together, I think this a proper Place to mention it, because one Figure serves both, which we shall explain when we come to it. They flower in June
and

and *July*, and the Seeds are ripe the latter End of *August*.

SMALLAGE, or *WATER-PARSLEY*.

APIUM, so called from *Apes* a Bee, these Insects being thought great Lovers of it, or of *Apex*, the Top of the Head, because Heroes were crown'd in Triumph with this Plant. The *Greek* Name is Σέλινον, *Selinum*, from *Dioscorides*, who also calls it *Eleoselinum*, from ἔλος, *Palus*, a Marsh, and *Selinum* the proper Name of the Plant ; for this Reason it was called also *Paludapium*, and *Apium palustre*.

SYNONYMA.

Apium and *Eleoselinum*, *Offic.* *Apium* vulgare, five palustre, *Mer. Pin.* 9. *Park. Theat.* 926. *Apium* vulgare ingratus, *J. B.* iii. 100. *Apium* palustre *Helioselinum*, *Chab.* 396. *Apium* palustre, five officinarum, *Raii Hist.* i. 447. *Synop.* iii. 214. *Apium* officinarum, five paludapium, *Merc. Bot.* i. 20. *Phyt. Brit.* 9. *Apium* palustre & *Apium* Officinarum, *C. B. Pin.* 154. *Tourn. Inst.* 305. *Elem. Bot.* 254. *Boerb. Ind. A.* 58. *Hist. Oxon.* iii. 293. *Rupp. flor. Jen.* 229. *Apium* palustre *Paludapium dictum*, *Mor. umb.* 21. *Eleoselinum* seu *Paludapium*, *Ger.* 862. *Emac.* 1014.

CHARACTER of Plant and Flower.

Smallage is a common Plant that grows in marshy Places, moist Ditches, and Brooks, in most parts of these

Kingdoms. It has green polish'd Leaves, cut in Wings or Parts, much larger than the common **Parsley**; the Stalks are divided into Branches, on whose Tops are little white Flowers, which are succeeded by the Seeds. The Root is very fibrous or stringy.

Tournefort's Character of this Plant is: It has a roseaceous and umbellated Flower, consisting of equal Petals or Flower-Leaves, set round in the Flower-cup, which produces the Fruit, consisting of two Seeds, gibbous and striated on one side, and plane on the other.

Miller. "The Leaves are divided into Wings, or grow
" upon a branched Rib, and are, for the most part, cut
" into small Segments; the Petals of the Flower are
" whole and equal, each Flower being succeeded by two
" gibbous channel'd Seeds". *Tournefort* makes this the *Genus* of all the kinds of **Parsley**, **Anise-Seed**, and **Cellery**, or **Sallary**; of each of which we shall speak in its Turn. This Plant flowers in *June*, and the Seeds are ripe in *August*.

MICROSCOPICAL Description.

The Seeds of **Bishop's-weed** and **Smallage** differ not in any Particular, either as to Size, Smell, Taste, or Dimensions. They may be consider'd to have a plane and convex Side; the convex Side has three Ribs or Ridges, running longitudinally along its Gibbosity, from one End to the other; which at the Extremities approach each other, but by reason of their Gibbosity lie further asunder on the Body of the Seed. One of the
Extremi-

Extremities projects further out than the other, and forms an *Apex*, which is its *Umbilicus*, but the other End is more round. Two of these Seeds, as they grow, stick together by their flat Sides, and the little *Stilus* that supports them, runs up between them at their rounder Ends.

The flat or plane Side is surrounded by a Ridge also, like the Ridges of the Back; from the lateral one of the Back on each Side there is a Space which lies between them and the Ridge, that goes round, or is the Edge of, the flat part, and this may be term'd the lateral part of the Seed; all these Features, together with its Form, makes the Seed look like a *Coal-Lighter*. The Ridges are of a dirty Oaker-colour, and the Spaces between them are darker; the Surfaces of those Spaces are rough and porous.

There is on the flat part a superficial Ridge, which runs longitudinally from one End to the other, and a Rising on each side of it; these are of the same Colour with those of the convex Part. These Seeds have a pungent warm Bitterness in their Taste, and an agreeable Aromatic Smell, and contain a yellowish dark brown *Parenchyma* or Substance within, and are about the sixteenth part of an Inch in length, and about a twentieth thick. See more of these Seeds in my Microscopical Description of *Hartwort*.

V I R T U E S.

The Seeds only of the *Bishop's-weed* are used, whereas the *Smallage* intirely comes into use, and the best

best Method of using the Plant is, to eat it by way of Sallad, with Oil and Mustard; this is good in all Infarctions and Grossness of Habit, as it is endowed with a very attenuating Quality.

The Seeds of both are warm, discutient, diuretic, and aperitive taken inwardly, in Infusions or Decoctions with Wine, or such other convenient Vehicles as may seem necessary to a Physician; and therefore they may, with success, be given to those who labour under Obstructions of the Urinary Passages (from viscid Humors or fabulous Matter) and of the *Liver*, *Spleen*, and *Mesentery*, from whatsoever Cause; and would make a fine Ingredient to heighten the Efficacy of Pectoral Decoctions. They also promote the *Menses*, and the Juice of the Leaves with *Mel Rosarum*, Barley-Water, a little Alum and Vinegar, makes a most efficacious Mouth-Water, for all kinds of Heat and Ulcerations of the Gums, Tongue and Throat. If the Juice be thickened with Bean-Meal, or any other, into the Consistence of a Cataplasm, it is good for old Ulcers and Sores on any part of the Body.

T A B. II. Fig. 9, 10.

A N I S E S E E D.

DIOSCORIDES calls this Plant *Ανισον* in Greek, from whence it is called in *Latin Anisum*.

SYNO-

SYNONYMA.

Anisum offic. *Ger.* 880. *Emac.* 1035. *Park. Theat.* 911. *Raii Hist.* i. 450. Anisum veteribus, *J. B.* iii. 92. Anisum vel Anesum, *Chab.* 396. Anisum herbariis, *C. B. Pin.* 159. Anisum vulgare, *Mor. umb.* 25. *Buxb.* 21. Anisum officinar. *Rupp. flor. Jen.* 229. Anisum vulgatius minus annuum, *Hist. Oxon.* iii. 297. Apium Anisum dictum, semine suaveolente, *Tourn. Inst.* 305. *Boerb. Ind. A.* 59.

CHARACTER of Plant and Flower.

The Stalk of this Plant is round and hollow, divided into small Branches set with Leaves next the Ground, somewhat broad and round; those that grow higher are more jagged, like those of young Parsley, but whiter. On the Top of the Stalks are spiky Tufts of white Flowers, which are succeeded by the Seed. *Tournefort* gives no particular Character of this Plant, because he ranges it as a Species of the *Apium*, and he always confines his Description to the Genus alone; from this Method many of the Plants remain undescribed: for although he may have had Reasons, from the Character of the Flower, to class Plants together, yet the other parts may differ so much as to deserve a particular Account.

In *Johnson's Gerard*, there is another kind of Anise mentioned, the Account of which is so remarkable, as

to

to deserve a Transcription here ; he calls it *Anisum Indicum stellatum*, **starry-headed Anise**, and says, “ this
 “ other Anise (whose Umbels *Clusius* had out of *England*
 “ from Mr. *Morgan*, the Queen’s Apothecary, and
 “ *James Garret* ; and which was brought from the
 “ *Phillippines* by Mr. *Thomas Candish* in his Voyage,
 “ when he encompassed the World) is thus described by
 “ *Clusius*. The Umbels were large, no less than those
 “ of the *Archangelica*, made of divers thick, stiff Foot-
 “ stalks, each whereof carried not double Seed, as the
 “ common Anise, but more, in a round Head some
 “ Inches over, made of Cods set Star-fashion, six, eight,
 “ or more, of a dusky Colour, wrinkled, divided into two
 “ equal Parts and open above : Most of these Husks were
 “ empty, yet some of them contain’d one smooth shining
 “ Ash-colour’d Seed as big as that of the *Orobus*. The Taste
 “ and Smell was the same with our common **Anise-**
 “ **Seed** ; wherefore they who sent it to *Clusius* called it
 “ **Anise** : Yet in the Place where it grew, it was called
 “ *Damor*, for Mr. *Candish* had the Name so written in
 “ the *Chinese* Characters.

Mr. *Miller* says, “ the **Anise** is a very difficult Plant
 “ to make grow with us ; for altho’ we have fresh Seeds
 “ from abroad, which will often come up very well, yet
 “ if there happens but a little wet or cold Weather in the
 “ Summer-time, the Plants will rot off and die away. It
 “ is not worth propagating for use here, because the Plant
 “ is so difficult to raise, and also since the Seeds which
 “ are brought from *Italy* hither, are so much better, and
 “ cheap

"cheap enough." It flowers and seeds in *June* and *July*. It grows plentifully in *Crete*, *Syria*, *Egypt*, and other Eastern Countreys; *Gerard* has sown it in his Garden, and had ripe Seed one favourable Year.

MICROSCOPICAL Description.

Two of these Seeds grow together upon one little Stalk; when they are pulled afunder, they appear to have a flat, and a convex, Surface. On the convex Surface, *Fig. 9.* each Seed has three Ribs placed at equal Distances from one another, which are porous and a little rough, being of a Straw-colour; and the Spaces between them are also rough and porous, but of an Olive-colour. The flat Surface, *Fig. 10.* has a white Ridge running longitudinally from its *Basis* to the *Apex* in the Middle; this white Ridge or Line serves to cling to the *Stilus*, upon which it sticks. The *Stilus* is also white, and has the same Contexture with the Ridge, and is *bifid*, in order to support two Seeds with their flat Sides together, which keeps them the more compact and less liable to Injuries, than if a single Seed stuck on. It is certain a single *Stilus* would do as well to support two Seeds as the bifid one, (for even the two stick together as if single) if there was not a Necessity for a double *Stilus*, for a very important Reason; which is, that when the Seeds are ripe they would stick on a single one, till the time of their being scattered about would pass, which would be a Detriment to their Propagation; but the *Stilus* being double (and of a springy Nature) the two Parts are glued

together, as long as Moisture remains about the Seeds, capable of keeping them together; but when the Seeds are grown ripe and dry, then this Moisture is exhaled, and the *Stilus*, as well as the flat Surfaces of the Seeds, begin to contract from their former Plumpness; the *Stilus* first begins to split asunder, and thereby separates the two Surfaces of the Seeds, each of which sticks loosely to its particular Limb of the *Stilus*; till at length the remaining Moisture exhaling more and more, it grow rigid, and cracks with a Blast of Wind, and so the Seed is scatter'd or sown in the Ground in its due time. This is a most excellent Provision of Nature, and highly worth regard.

When the two Seeds are sticking together, they have a round End which is the *Basis*, and grow smaller by degrees upward, till they become an *Apex*, having, upon each Seed, a kind of fungous or bulbous *Corona*, which is the *Umbilicus* of the Seed; and the Shape of the two together may be compared to that of a green Fig reversed. The *Parenchyma* of these Seeds is of a pale greenish Olive-colour, and has an exceeding sweet Taste, and the Smell (as is well known) is very pleasant. They are more exactly of a size, than most other Seeds, and are each one eighth part of an Inch long, and more than half that breadth.

V I R T U E S.

The use of these Seeds is very well known in many Respects; however, we shall mention one Particular, which is, that where Medicines, such as *Squills* and the like,

like, are to be taken in Asthmatic or Anasarcal Cases, nothing adds more to their Efficacy, than the Preparations of these Seeds. This I have often experienced, and have found that, in difficulties of Respiration, the Oil of Anise-Seeds is an efficacious Medicine to come into any Composition. They are in general a noble Carminative and Deobstruent, and good in all the same Intentions of the foregoing Seeds.

T A B. II. Fig. 11.

DANDELION SEED.

DENS *Leonis*, **Lion's-Tooth**, so called from the form of the Leaf, which is thought like the Jaw and Teeth of a Lion. It has, by some, been called **Monk's-head**, because after the Flowers and Seeds are gone, it looks round and bald. The *French* call it *Pissenlits*, **Pissabed**, from a Notion, that if Children handle or eat it, they cannot retain their Urine.

SYNONYMA.

Dens Leonis, *Taraxacum*, *Offic.* Dens Leonis, *Ger.* 228. *Emac.* 290. *Raii Hist.* i. 224. *Synop.* 76. Dens Leonis vulgaris, *Park.* 780. *Hist. Oxon.* iii. 74. Dens Leonis latiore folio, *C. B.* 226. *Tourn. Inst.* 468. *Boerb. Ind. A.* 88. *Dill. Cat.* 50. *Buxb.* 96. *Hedypnois* five

Dens Leonis Fuchsi, *J. B.* ii. 1035. five Dens Leonis, *Chab.* 323.

CHARACTER of Plant and Flower.

This Plant sends forth long Leaves deeply cut on the Edges, like those of wild Succory, but smoother. Every Stalk bears a Flower something larger than that of Succory, but double, and thick set together, and of a yellow Colour, which at length becomes a downy Head, or what the Country People call **Blow-Ball**, that, when the Seed is ripe, is carry'd off by the Wind; the Root is long, slender, and contains a milky Juice, bitterer than that of Endive and Succory. Mr. *Miller* says, "it agrees with the **Hawkweed** in all respects, but only in its having a single naked Stalk, with one Flower upon the Top, whereas the **Hawkweeds** have branching Stalks; to which may be added, the Flowers are for the most part fistulous or piped." *Tournefort* counts three and twenty Species of this Plant, which are more the Inhabitants of Botanical Gardens, than for any other use, except one which we now describe, being the broad-leav'd **Dandelion**; and this is so common in the Fields, that it needs not be cultivated in Gardens; besides, if it were suffered to seed in a Garden, the Gardeners would find it a hard Task to eradicate it, as it would be blown to every part. It flowers all the Summer. I have gathered ripe Seeds of two sorts in the Beginning of *June*, and if Winter be not too cold, the Flowers appear most times in the Year.

MICROSCOPICAL Description.

The Seeds of **Dandelion**, when view'd with a Microscope, may be compared to a prickly Cucumber ; the smaller End is fixed in the Seed-Head, and the larger rises by degrees thicker upward, till it terminates in those blunt Prickles or Processes pointing upwards ; in the middle of these there arises a Process somewhat higher than the rest, a little taper'd, from which a delicate slender white Stalk is continued about three Lengths of the Seed ; this Process is of the same Colour and Substance with the Body of the Seed, and the white Stalk is suddenly joined to it, as if a Piece of Silver was soldered to a Piece of Brass. The white Stalk is thick, where it is joined to the Seed, and runs up smaller to about the Middle, continues of that Size, till near the Top it again grows thicker, and then becomes the *Basis* of an exceeding fine Snow-white filky Tuft, made up of a number of fine filken Fibres. When all the Seeds are yet standing upon the Ball of the Plant, 'tis then, all together, they form the downy Head which is well known all over the Fields in the Months of *May* and *June*. The use of these Tufts is, when the Seed grows dry enough to shrink from the little *Alveolus* in which it stands, to bear it up and render it light enough to be carried away, to a distant Place, before the Wind. The Seeds of the **broad-leaved Dandelion** are of a greenish Olive, and those of the **narrow-leaved**, are of a dusky red Colour, but agree in all other Respects. The Seed is about one seventh of an Inch long, and a sixteenth thick, is somewhat irregularly sulcated ; the white Stalk is
three

three Lengths of the Seed, and the silky Tuft a quarter of an Inch long ; the *Parenchyma* is white, and has no considerable Smell ; the Taste is somewhat faint and nauseous, but has no Bitterness.

V I R T U E S.

This Plant is a Cooler and good Stomachic ; 'tis thought also good as an Opener and Cleanser of the Liver. *Schroder* thinks it chiefly good in putrid Fevers, and *Etmuller* in Pleurifies. Some count it a good Deterger of foul Ulcers. It is often gathered and steeped in Water over Night, to be eaten next Day with Oil and Vinegar as a Sallad ; the Water deprives it of some of its Bitterness, and renders it both a pleasant and wholesome Thing.

T A B. II. Fig. 12, 13.

Sweet F E N N E L S E E D.

THE *Greeks* called the Fennel *Μάραθρον*, from *Μάραινω*, to cause it to wither and dry ; because it was their Custom to make it up like Hay, against Winter, to preserve it. And it was probably for this Reason, that the *Latins* called it *Fœniculum*, little Hay, from *Fœnum* ; either because it was finer, or in less Quantity. Some imagin'd it was called *Fœniculum*, from *Fœnus*, *quod satum magno cum fœnore semen reddat* : that it brings forth its Seed with great Increase. But this might

might be said of many Seeds, and therefore not probably the Etymology of the Word: But *Fænum*, Hay, is indeed derived of *Fænus*, either because it increaseth without much Care, or from *Fætus*, because the same Plants bring forth Yearly new Hay. There are other Conjectures about it, but these seem the most proper.

SYNONYMA.

Fœniculum Dulce, *Offic.* Ger. 877. *Emac.* 1032. *Park. Theat.* 884. *C. B. Pin.* 147. *Boerb. Ind. A.* 48. *Mor. Umb.* 3. *Hist. Oxon.* iii. 270. *Raii Hist.* i. 458. *Fœniculum Dulce* majori & albo semine, *J. B.* iii. 4. *Tourn. Inst.* 311. *Elem. Bot.* 260. *Rupp. flor. Jen.* 224. *Chab.* 381.

CHARACTER of Plant and Flower.

The common *Fennel* is a Plant so well known, as not to need a particular Description of its Structure, and the sweet *Fennel* bears a near Resemblance to it, only that its Leaves are larger and more sappy, and the Seeds somewhat larger and longer. The Character of the Flower is as follows, with both *Mr. Miller* and *Tournefort*; the Words of the former are: “ It is an umbelliferous Plant, “ whose Leaves are divided into capillacious Jags; the “ Petals of the Flower are intire, and placed orbicularly, “ expanding in form of a Rose. Each Flower is succeeded “ by two oblong thick gibbous Seeds, which are chan- “ nelled on the one side, and plain on the other.

The

The common sorts are Plants that last several Years, and seem to be but a Variety from each other; but the *sweet Fennel* dies every Year. The Seeds of this Plant are ripe the latter End of *August*, and the Root lasts not long after. These Seeds are brought from abroad, and are much better than any our Climate can produce. In *Johnson's Gerard* I find said of this, what I cannot reconcile with its being an annual Plant: he says, "the
 " second sort (sweet Fennel) do not prosper well in this
 " Country; for being sown of good and perfect Seed,
 " yet in the second Year of its sowing, it will degene-
 " rate from the right Kind, and becometh common
 " *Fennel*:" This however we rather discredit, since *Mr. Miller* also confirms what I have said above, that they do not abide more than one Year, whose Observations no doubt may be rely'd on. The sweet Fennel Seeds are brought from *Germany*.

SYNONYMA of the Common FENNEL.

Fœniculum, Offic. *Fœniculum vulgare, Ger.* 877. *Emac.* 1032. *Park. Theat.* 884. *Raii Hist.* i. 457. *Synop.* iii. 217. *Fœniculum vulgare minus, acriore & nigriore semine, J. B.* iii. 2. *Tournf. Inst.* 311. *Elem. Bot.* 260. *Marathrum sive Fœniculum, Chab.* 381. *Fœniculum vulgare Germanicum, Boerb. Ind. A.* 48. *Rupp. flor. Jen.* 224. *Mor. umb.* 3. *Hist. Oxon.* iii. 270. *C. B. Pin.* 147. This Plant has also gone by the *English* Name *Finckle*.

There

There is another kind of **Fennel**, which is from *Italy*, and is called by the *Italians*, *Finocchio*, in our Seed-Shops **Finoki**. This seems to be a common kind in *Italy*, and is much in use; they make a Wine of it, which they call *Vino con Finocchio*, Wine prepared with Fennel, or *Fennel Wine*. And the Stalks cleansed of their Membranes, are much admired to relish Wine. It has now got into our Gardens, and the best manner of cultivating it is laid down by Mr. *Miller*, to whose Book I refer the Reader. *Plukenet*, in his *Almagestum Botanicum*, calls it *Fœniculum dulce Azoricum*, perhaps from its being common in the Islands that are called *Azores*.

The Features and Structure of these, the sweet Fennel, and our common Fennel-Seeds, are so much alike (excepting that the sweet is longer and larger than either) that our Microscopical Description of the sweet Fennel-Seed will suffice for all.

MICROSCOPICAL Description.

In viewing these Seeds, they do not look much unlike one Species of the **Cucumber** in general, some of them being thicker and longer than others, and some straiter; but upon applying the Microscope, the Ridges appear high, and form deep Furrows.

Two of these Seeds grow together upon the same little Stalk, which is divided, like that of the **Anise-Seed**, into a double or bifid *Stilus*, in the same manner, and for the same Reasons; when the two are pulled asunder, they appear to have a flat Surface (*Fig. 13.*) and a round and

L

ridged

ridged one (*Fig. 12.*) On the former these Characters are conspicuous: *viz.* 1. The whitish *Cortex* or Covering of the Seed shews its Edge distinctly: 2. Within side this Edge, a white fungous Substance appears running parallel to, and in close Contact with it, on each side from End to End, being both together about one third of the breadth of the Seed; and between these, in the Center, there appears a dark brown elliptical Substance, which, upon separating the cortical and fungous Coverings, appears to be a *Nucleus*, whose internal Substance is of an Olive-colour, and something succulent. On the external Surface there appears three high Ridges, and when the flat Faces of the Seeds are close together upon the *Stilus*, so as to seem but one, these three Ridges on each Seed, and the two Edges of each, meeting firmly together, form eight regular Ridges equally divided upon that round Body, that we have before said to resemble a *Cucumber*. The Extremity which is fixed to the Stem is smaller than the other; the latter has a fungous kind of Process arising from the Body of the Seed, which is the *Umbilicus* of the Seed. The Ridges are of a light Straw-Colour, and the Bottoms of the *Sulci* they form, are darkish. Their Smell and Taste are remarkably sweet, and a middling Seed is somewhat more than two eighths of an Inch long, and above half that Breadth. *Tournefort* mentions twenty-one Species of *Fennel*.

V I R T U E S.

These Seeds are diuretic and carminative, and are accounted more efficacious than the common Fennel; they are very good in *Ptisans*, or pectoral Decoctions, for Disorders of the Lungs; they comfort and ease the Stomach of Pains, and increase Milk in Nurses. Old Authors, especially *Dioscorides*, had this Plant in great Esteem as an Antidote against Poisons, and the Bites of Vipers or Mad-Dogs; for the latter, the Roots made into an Ointment with Honey, and apply'd to the bitten Place. The Juice of the Stalk and Leaves dried in the Sun, is much commended by *Dioscorides*, as an excellent Medicine for helping the Sight, and so is the Juice of the green tender Branches and Seeds, when they are just form'd. The same Author says, that in the Western Parts of *Spain*, the Fennel produces a gummy Juice; the Country People there cut off the Stalk, and placing it near the Fire, the Gum exudates by the Heat, which is counted still more efficacious for the Eyes. *Schroder* holds it good for the same Purpose; and a distill'd Water or an Infusion of the Seeds would be a good Vehicle in *Collyriums*. In short, this Plant had obtained so much Credit as an Ophthalmic, that it is included in the following Distich, among others of the same Intention.

Fœniculus, Rosa, Verbena, Chelidonia, Ruta,

Ex his fit aqua, quæ lumina reddit acuta.

T A B. II. Fig. 14, 15.

E N D I V E S E E D.

THE Greeks called this Plant in common with Succory, Σέπis, *Seris*, or *Intybus*, Ἐντυβός; yet some Readers of *Dioscorides* take it rather to signify the *Endivia*, which is derived of *Endo*, and *Via*, *In the Way*; because it grows in plenty every where. *Endo*, from Ἐνδόν, which signifies *Intus*, *within*, or *in*; hence it is likely the *Latins* composed the Word from that *Greek* Preposition and the Word *Via*, and made it first *Endovia*, which by Corruption afterwards, became *Endivia*. According to *Pliny*, there was a Distinction made between this Plant and Succory; he says (*lib. 20. c. 8.*) “*Intybum in Ægypto Cichorium vocant, quod sylvestre sit; sativum autem Seris, quod est minus & venosius.*” Here *Pliny* speaks of the *Intubus*, as a general Title for both; I should therefore be inclin’d to think the *Seris* to be the *Endive*. In *Pliny*’s time, the wild *Intubus* was called *Ambubaia* at *Rome*. This Plant (*Endive*) was also called in our Shops *Scariola*, which was a Corruption of the Word *Seriola*, according to *Matthiolum*, who accuses the Translator (of *Johannes Seraphion*, the *Arabian* Physician’s Book of simple Medicines) of having been the Occasion of that false Reading; and the *Seriola* is no other than a Diminutive of the *Seris* of the *Greeks* (which *Matthiolum* says, is the *Intybus Latifolius* of the *Latins*)

Latins) to signify a lesser-Leav'd, or a narrower kind than the *Latifolius*.

SYNONYMA.

Endivia, Scariola, Intybus, *Offic.* Endivia fativa, *Park. Theat.* 774. Intibus fativa, *Ger.* 221. *Emac.* 282. *Raii Hist.* i. 254. Intubum, *Parkin. Parad.* 495. Intybus fativa latifolia, five Endivia vulgaris, *C. B.* 125. *Hist. Oxon.* iii. 53. Intibum sativum latifolium, *J. B.* ii. 1011. Cichorium latifolium, five Endivia vulgaris, *Elem. Bot.* 381. *Tourn. Inst.* 479. *Boerb. Ind. A.* 91.

CHARACTER of Plant and Flower.

The **Garden Endive** has Leaves that are broad and smooth, something like a Species of **Lettuce**, but indented a little on the Edges; the Stalk is hollow and round, producing a milky Juice. The Branches sustain Flowers which are blue or white, and are succeeded by small oblong whitish Seeds. In *Johnson's Gerard*, there is another sort of Endive described, which is the curled sort; the Leaves are like the curled or Cabbage Lettuce, but greater, among which rise up strong and thick Stalks, set with the like Leaves, but somewhat lesser, and not so notably curled or crisped. The Flowers grow at the Top, blue of Colour; the Root perisheth, as does the whole Plant, when it has brought forth the ripe Seed. The Roots of the **Garden Endive** have white Fibres, and are also annual.

All the kinds of the **Endive** and **Succory** are much known in *Italy*, and several of them raised and prepared for the Table. *Matthiolus* tells us the Method the Gardeners use to render the **Endive** white, which has at its first Growth, green Leaves, at least more green than white; he says, they bury the Plants under the Ground in Sand in Winter, which makes them white and tender, and takes away much of their Bitterness, and are thus preserved all the Winter; this they were accidentally taught, by having seen **Succory** under Sand, in Fields that had been overflowed.

We have had this manner of burying **Endive** among ourselves a considerable time; for *Gerard* gives us the Method of doing it. **Endive**, says he, being sown in the Spring, quickly cometh up to flower, which feedeth in Harvest and afterwards dieth; but being sown in *July*, it remaineth till Winter, at which time it is taken up by the Roots, and laid in the Sun or Air for the Space of two Hours; then will the Leaves be tough, and easily endure to be wrapped up in an Heap, and bury'd in the Ground with the Root upwards, where no Earth can get within it, which if it did, would cause Rottenness: the which so covered may be taken up at times convenient, and used in Sallads all the Winter, as in *London* and other Places is to be seen; and then it is called White Endive. However these Differences be, it is certain the **Endive** and **Succory** are often mistaken for each other, and are equally good to eat.

The

The common broad-leaved *Endive*, and common narrow-leaved *Endive*, are now much disused in the Kitchen-Gardens, according to Mr. *Miller*, being vastly inferior to the curled kinds, which are by much the larger and handsomer Heads.

MICROSCOPICAL *Description.*

The Seeds of *Endive* may be consider'd to consist of two Parts, the Body and *Corona*. The Body is gibbous on one side and hollow'd on the other, and is sulcated longitudinally on all sides; they are thicker at the crowned Extremity, and are taper'd downwards to the smaller End, which has an Opening or Hole as it were bored upwards, whose Bottom is porous or spongy; this Opening is not deep. The Body is quadrangular, which renders it like a Wedge, and is of a light Straw-Colour.

The *Corona* is foliaceous or leafy; the little Leaves are hard and chaffy, set all round the Edge of the upper Extremity, so as to form a Cup (*a*), which has a hollow Bottom, and porous, and has, in its Center, a little rough Process; these Leaves are whiter than the Body of the Seed, and are set pretty thick. The Seeds contain an Olive-coloured *Parenchyma*, which is bitter to the Taste, having no considerable Smell; and the Size of a middling Seed is more than an eighth part of an Inch long, and about one twelfth of an Inch thick. The *Corona* is the *Umbilicus* of the Seed.

V I R T U E S.

Endive has been always reckon'd among the Coolers, by old Authors, but later Writers think it otherwise, because of its Bitterness ; and therefore count it a good Deterger. *Schroder* and *Ray* are in the latter Opinion ; whence it is thought a good *Hepatic Deobstruent*. There was a distill'd Water of Endive, and it is now retain'd in some Shops in *France* and *Italy* much in Esteem, which was used as a Vehicle to purging Draughts, and cooling Julaps, and also for Injections for the Pudenda of both Sexes, when excoriated by any Cause whatever. The bruised Leaves are by Country People apply'd to inflamed Eyes.

The distill'd Water was so much esteem'd by the People of *Italy*, that I find *Matthiolum* accusing those who made it, of Neglect and Idleness, for substituting the *Hieracium*, and sometimes wild Lettuce, for **Endive** and **Succory**, which were plenty enough. The Water was called *Aqua de Endivia*.

T A B. II. Fig. 16.

S U C C O R Y S E E D.

CICHOREUM, the Etymology of this imports the same Reason with that of **Endive**, altho' in other Terms ; it is so called from *Χιχώριον* of *Χιχέω*, to attain

attain or find, and *Xōpos*, a Place, because it is to be found in every Place.

SYNONYMA.

Cichoreum fativum, *Seris*, *Offic.* *Cichoreum*, *J. B.* ii. 1007. *C. B.* 125. *Ger.* 220. *Emac.* 280. *Park. Parad.* 497. *Hist. Oxon.* iii. 55. *Raii Hist.* i. 255.

CHARACTER of Plant and Flower.

There are two sorts of **Garden Succory**, the broad and the narrow-leaved; the first has Leaves somewhat hoary, which resemble those of **Endive** in their Figure, but a little narrower. The Stalk is divided towards the Top into several Branches, whereon grow blue Flowers, consisting of many small Leaves, which are succeeded by the Seed; the Root is tough and white, and continues several Years. The whole Plant yields a milky Juice, which is bitter. *Gerard* has several other Species of **Succorys**, as the wild and yellow, together with the *Cichoreum spinosum*, the **Thorny Succory** of *Candy*, which do not much differ from each other; only the **wild Succory** he mentions to have Flowers of a white, inclining to a blue, Colour; and the Thorns, which are peculiar to this Species, make the Differences.

Tournefort and *Mr. Miller* make the *Cichoreum* the *Genus*, and class the several **Endives** with its Species, which with the former are fourteen. The general Character of Plant and Flower agrees in both these Authors; that of the latter is, "It is one of the milky Plants, with

“ a plain radiated Flower ; the Flowers are produced
 “ from the Sides of the Branches, at the setting off of
 “ the Branches upon short Foot-stalks. The Cup of the
 “ Flower is like a contracted Seed-Vessel ; the Seeds
 “ are angular, umbilicated, and in shape somewhat like
 “ a Wedge.” The Seasons, according to this Author, for
 sowing the Seeds, are in *May*, *June*, and *July*, at four or
 five different times ; for that which is first sown, is very
 apt to run to Seed, especially if the *Autumn* prove warm
 and dry ; but however, it is necessary to have a little sown
 in the Decrease of the Moon in *May*, for the first Crop ;
 again in *June*, the Middle or latter End ; and for the last
 Crop about the Middle of *July*. For the manner of cul-
 tivating, blanching, &c. as they are now used, we refer
 the Reader to that ingenious Author's Dictionary.

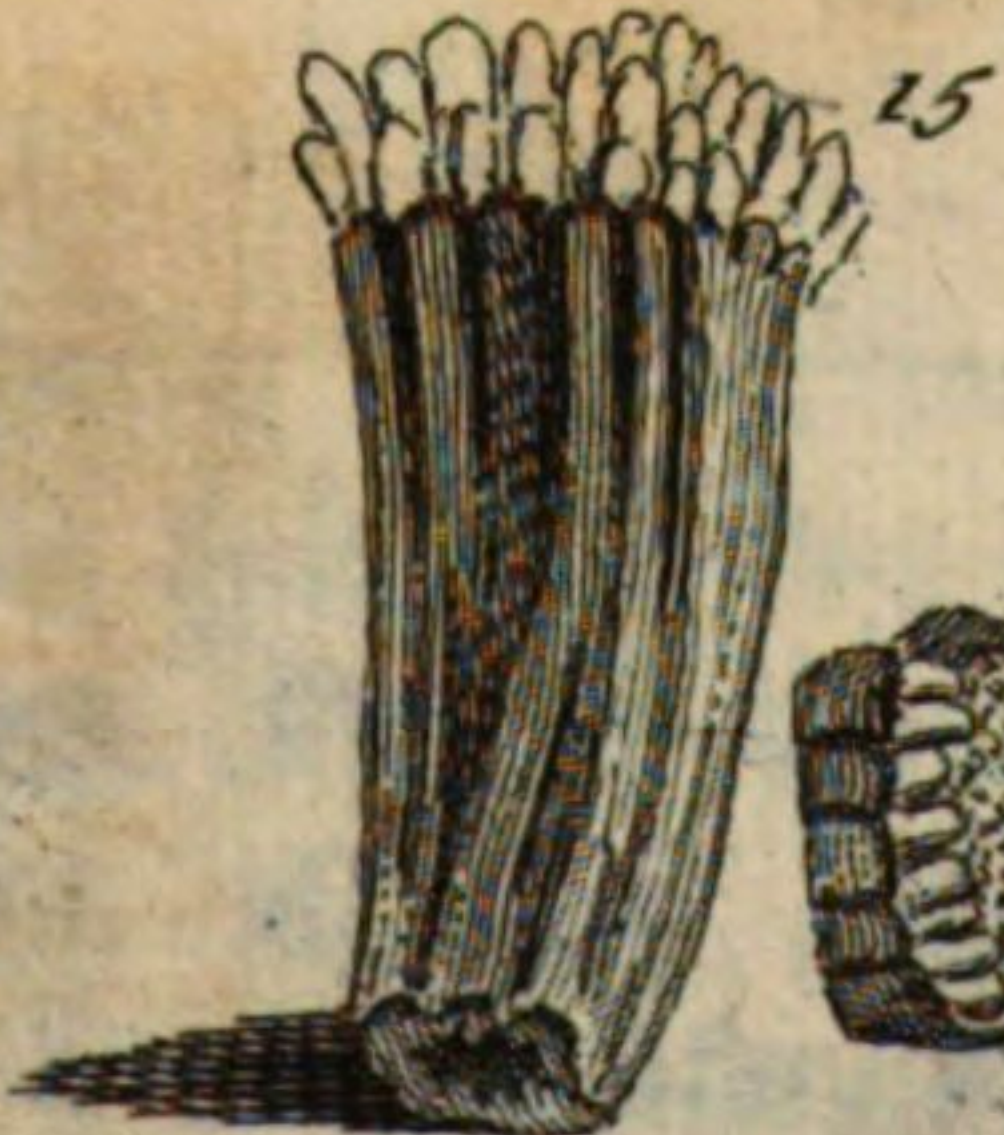
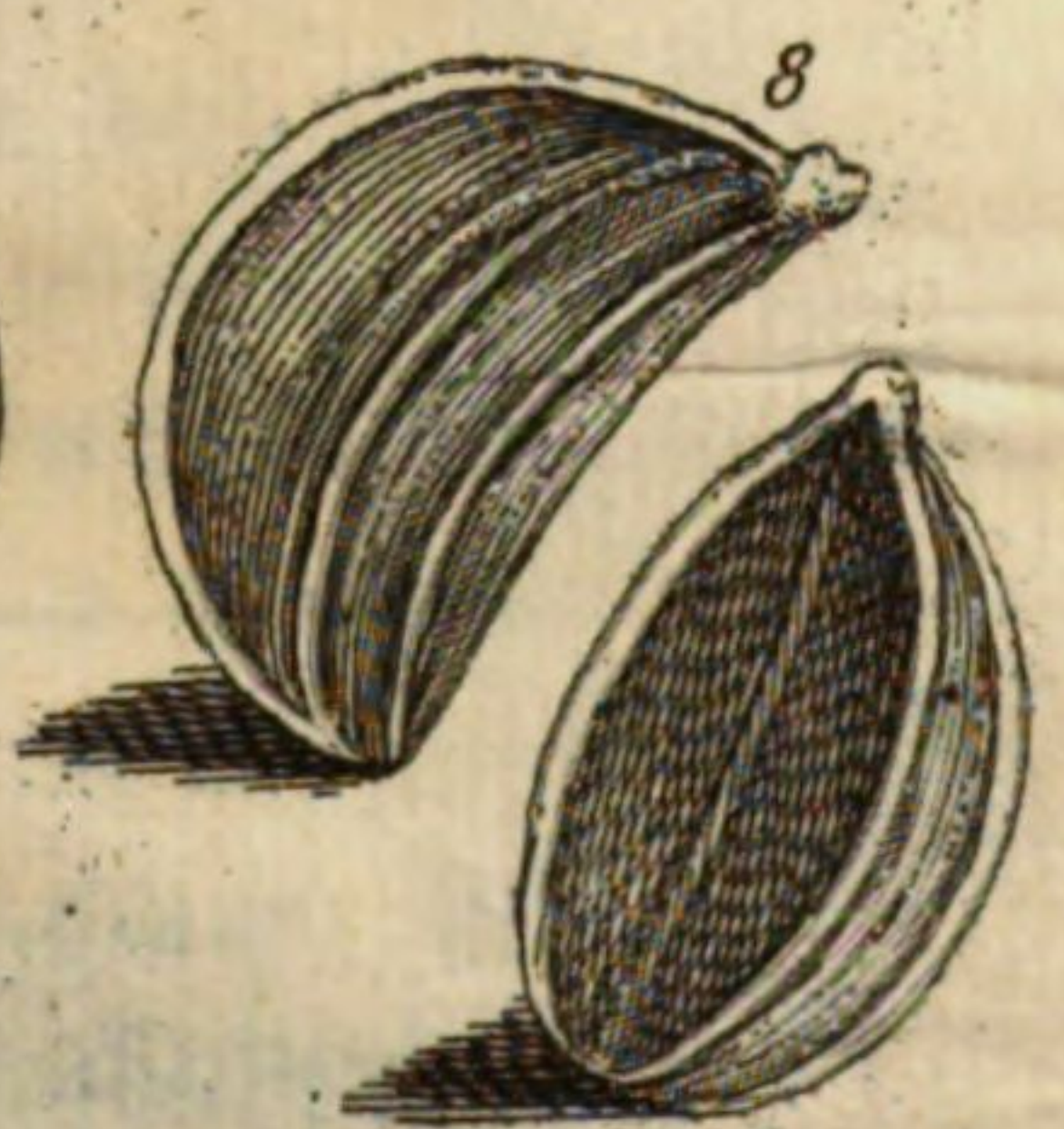
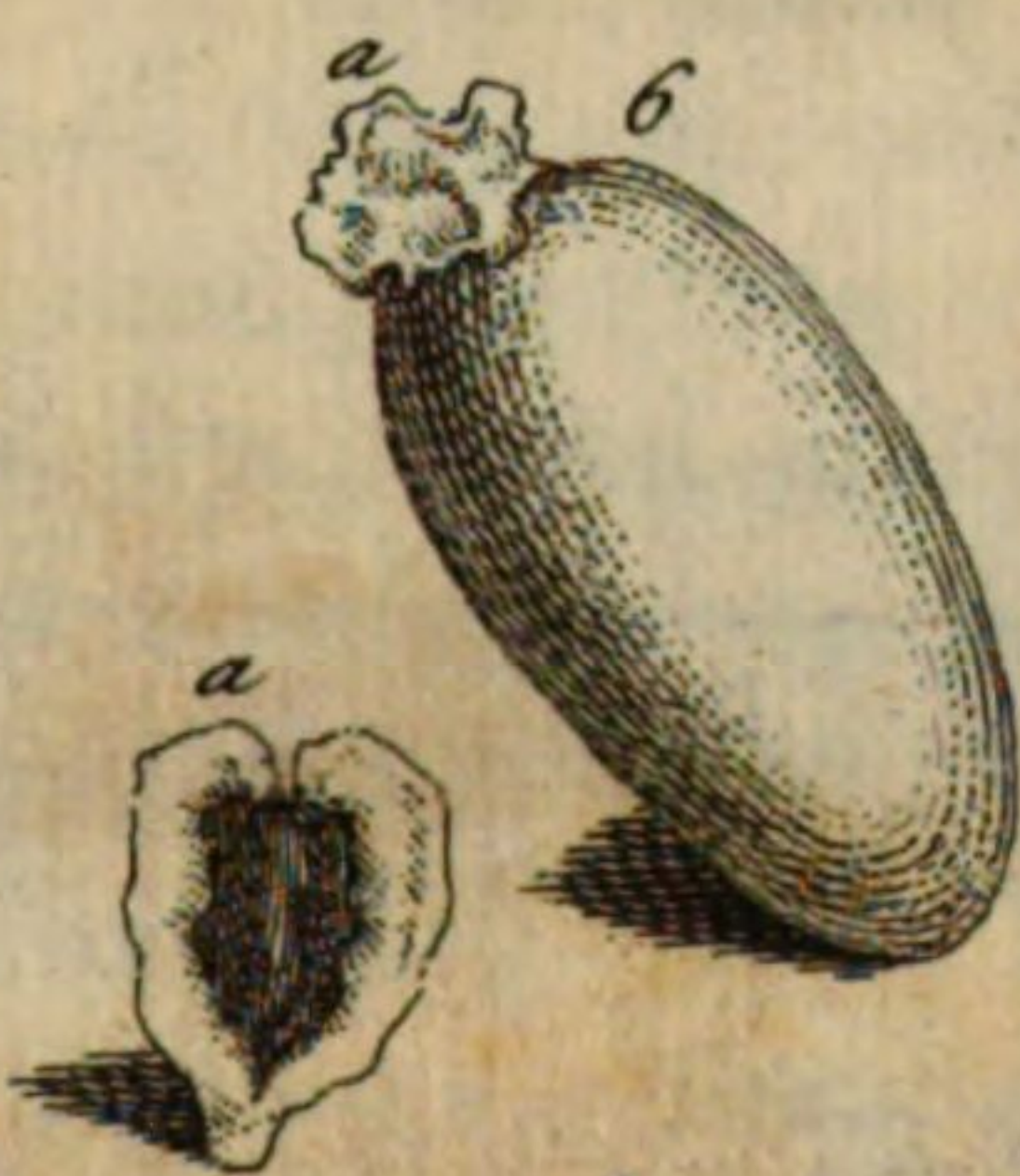
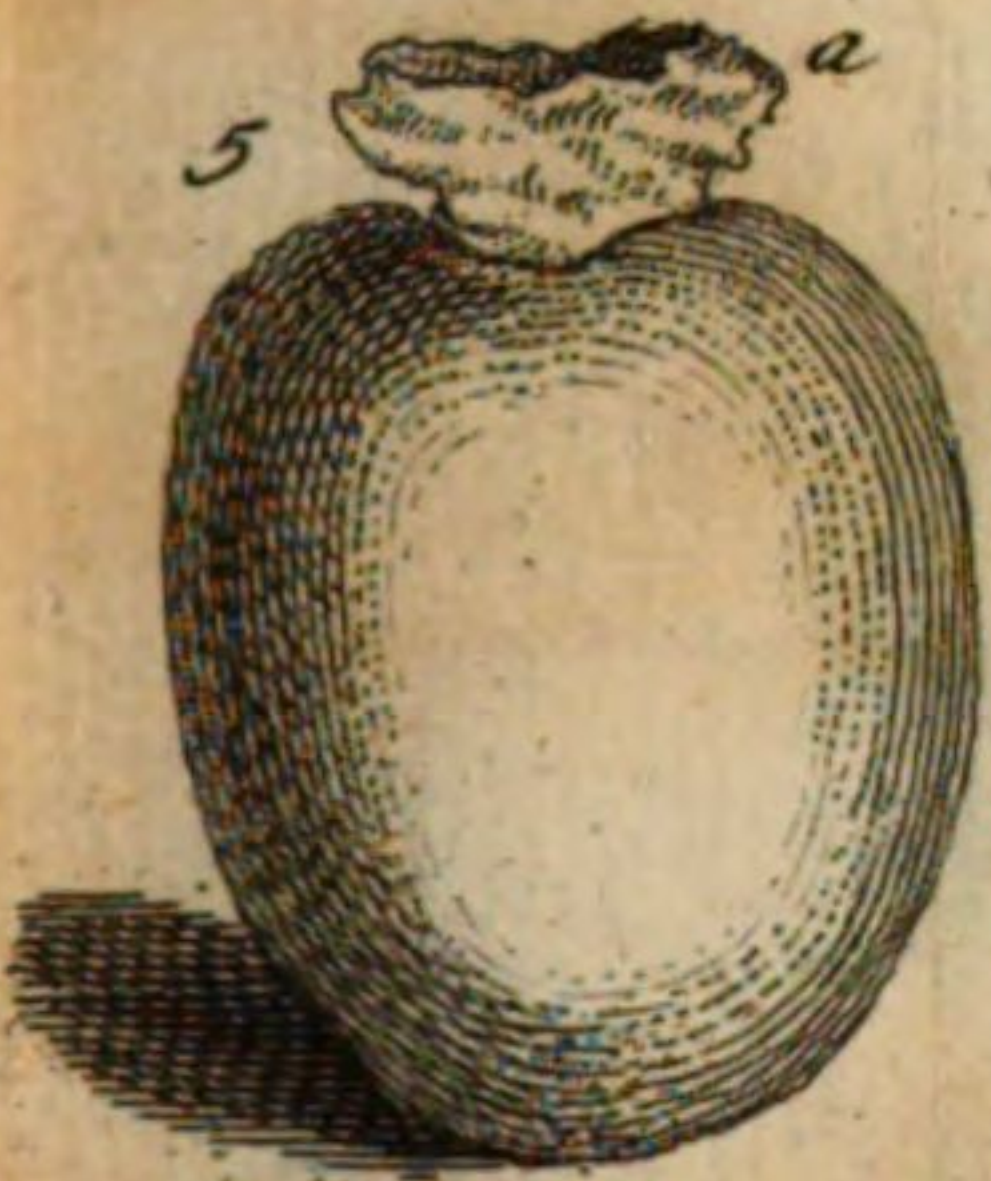
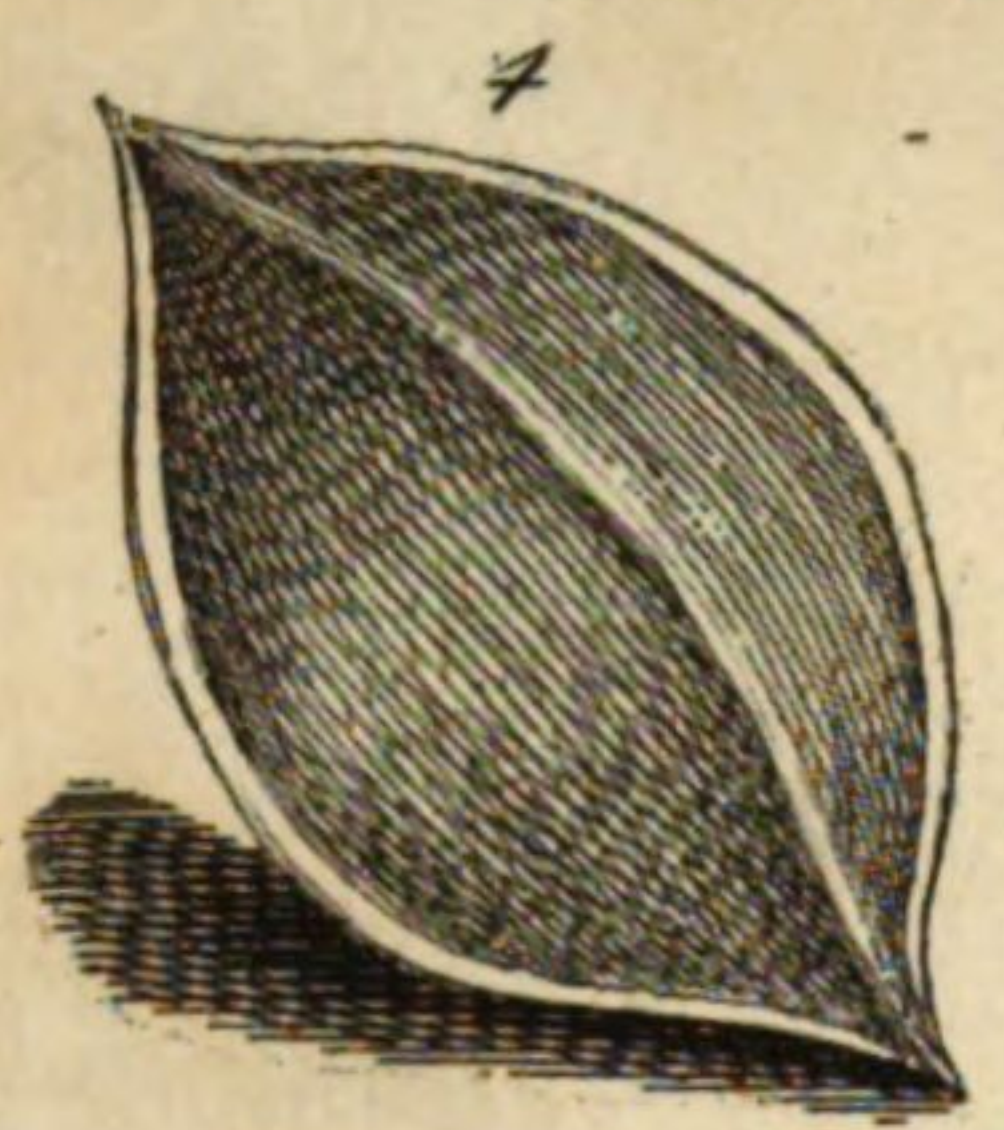
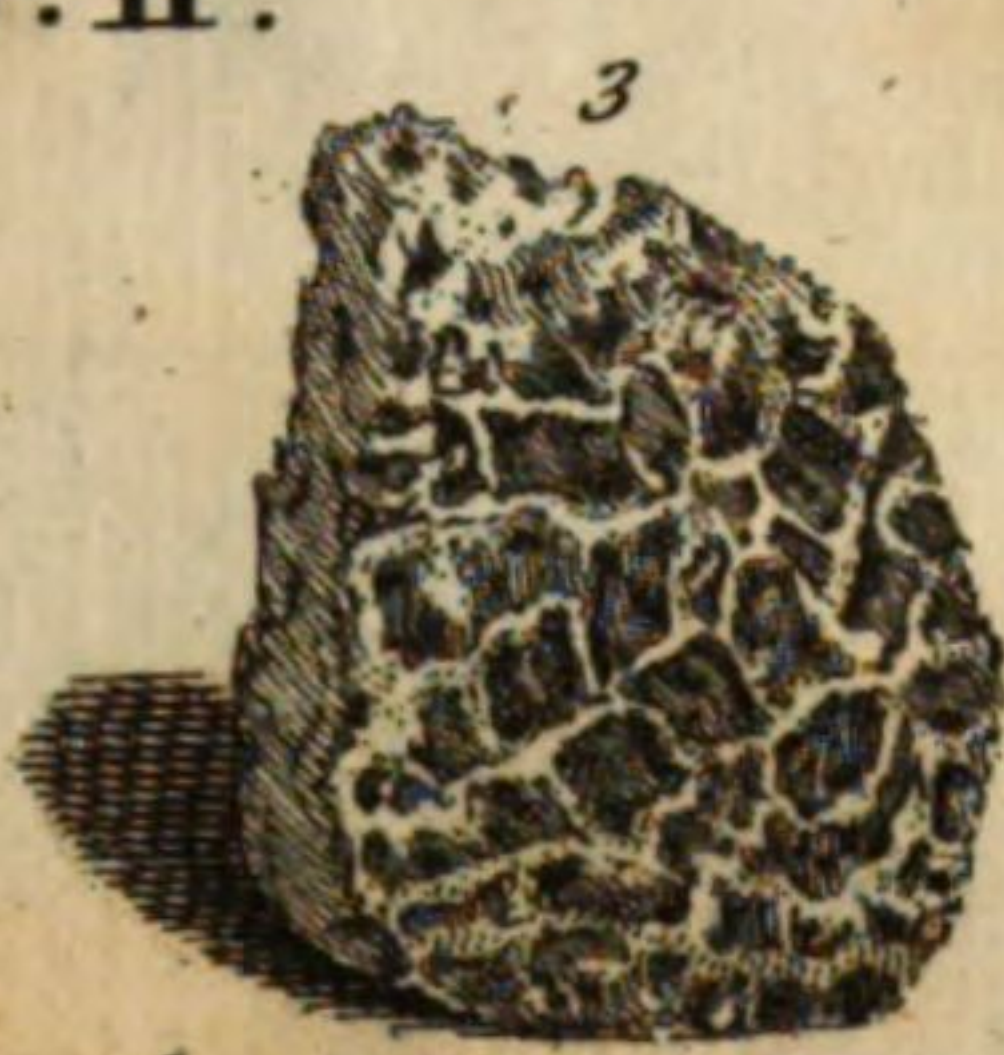
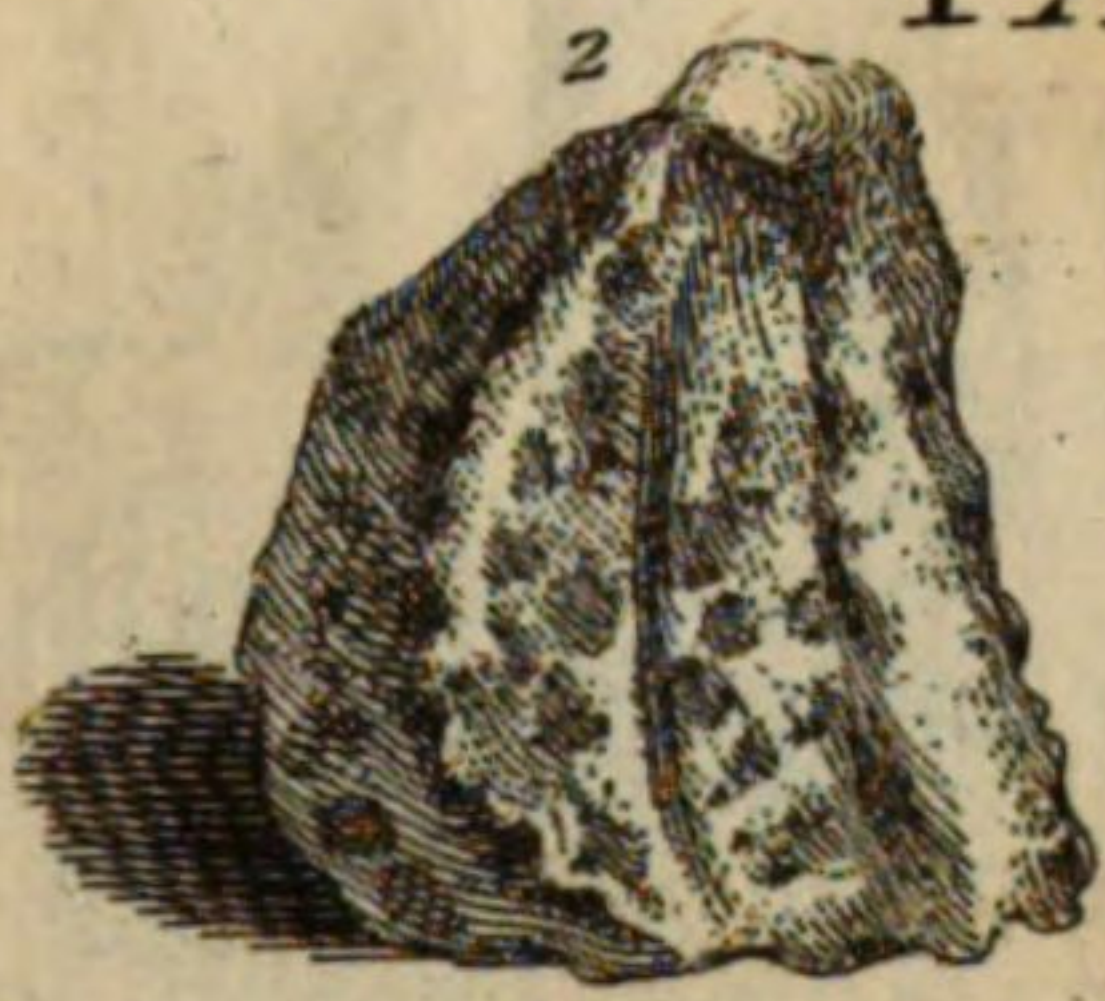
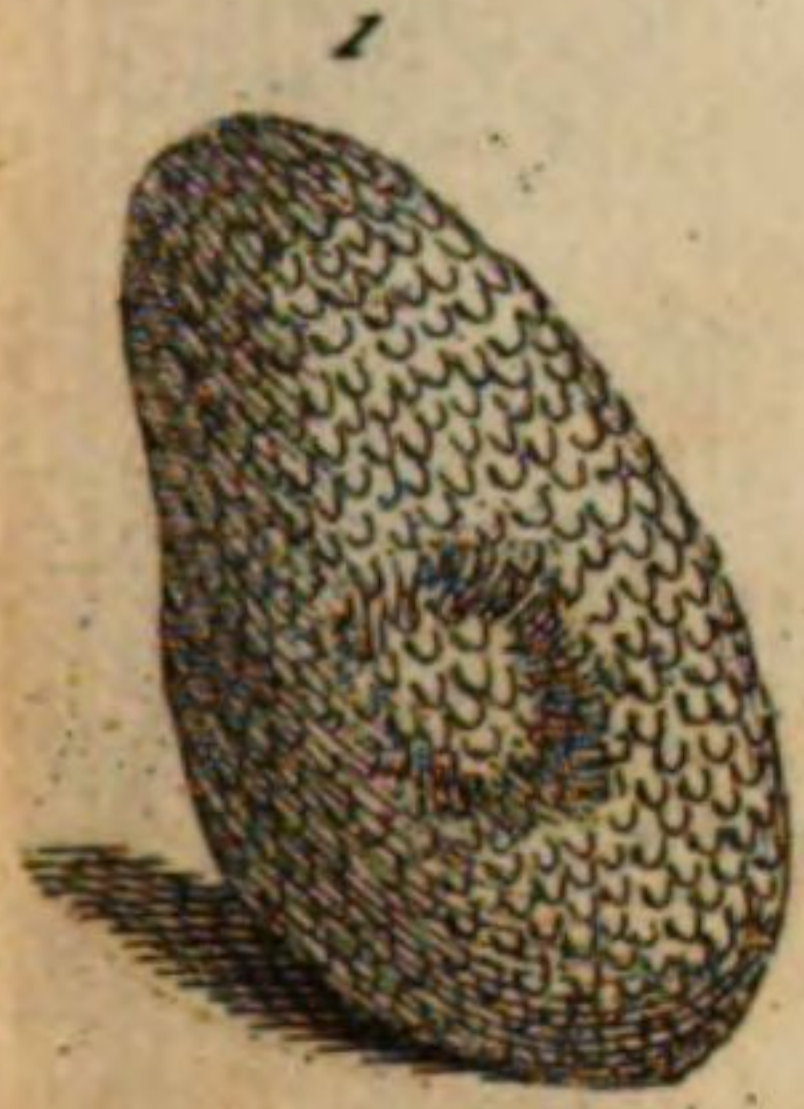
MICROSCOPICAL Description.

The Description of the *Endive* Seed agrees in all
 Respects with this, except three. This is smaller, of a
 darker Colour, and the Leaves of the Coronal *Umbilicus*
 are not near so long.

VIRTUES.

These Plants agree also with the *Endive*, in every use
 that is made of it ; of which there is a Syrup retain'd in
 the Shops under the Title *Syrupus de Cichoreo cum Rha-*
barbaro, commended much by *Etmuller* for Children.
Panarolus also commends this Plant in Diseases of the
Viscera, and *Spigellius* mentions it as an *Anti-arthritic*.

T A B.





T A B. III. Fig. 1, 2.

P I O N Y S E E D.

THE Greeks called this Plant Γλυκυσίδη, *Glycyside*, of Γλυκύς *dulcis*, perhaps because the Seeds have a sweetish Taste, for which reason, probably, it had also the Name *Dulcifida*. It was also called *Pentorobon*, of Πεντε, five, and Οροβον, *Orobos*, the Name of the ~~Wood-~~Pea, because it was said to have five Seeds like those of that Plant.

The *Latin* Word *Pæonia*, is so called from Παιών, or Πάϊαν, *Pæan*, a Name given to *Apollo* as God of Medicine, or to Hymns, which were frequently sung in Honour of him, because of that Art : It is derived from Παύω, *facio cessare, finio, coerceo*, from causing Diseases to cease ; some say it is called by this Name from *Pæon*, the Name of a Man skilled in the Art of Healing, who (as *Homer* has it) cured *Pluto*, when he was desperately wounded by *Hercules*, with this Plant. Hence *Pæonius, Pæonia, Pæonium*, had the same Signification with *Medicinalis*.

SYNONYMA.

There are several Species of this Plant, of which we shall take Notice of the *Synonyma* only of four :

1. The **Male Piony**. *Pæonia mas, Offic. Ger. 830. Emac. 980. Boerb. Ind. A. 292. Park. Theat. 1381. Parad. 341. Raii Hist. i. 693. Mer. Pin. 96. Pæonia*

M 2

mas

mas præcocior, *J. B.* iii. 492. *Chab.* 490. *Pæonia* folio nigricante splendido, quæ mas, *C. B. Pin.* 323. *Tourn. Inst. Elem.* 273. *Bot.* 238. *Pæonia* simplex latiore folio trifido, *Hist. Oxon.* iii. 454.

2. The **Female Piony**. *Pæonia* fœmina, *Offic. Ger.* 830. *Emac.* 981. *Mer. Pin.* 96. *Raii Hist.* i. 694. *Pæonia* fœmina vulgaris, flore simplici, *Park. Theat.* 1380. *Parad.* 490. *Pæonia* communis vel fœmina, *C. B. Pin.* 323. *Hist. Oxon.* iii. 454. *Tourn. Inst.* 274. *Elem. Bot.* 238. *Boerb. Ind. A.* 294. *Pæonia* vulgatioꝛ fœmina, *J. B.* iii. 492. *Chab.* 490.

3. The **common Piony**. *Pæonia*, *Offic.* *Pæonia* fœmina multiplex, *Ger.* 831. *Emac.* 981. *Pæonia* fœmina vulgaris, flore pleno, rubro, majore, *Park. Theat.* 1380. *Parad.* 341. *Pæonia* fœmina flore pleno rubro, majore, *C. B. Pin.* 324. *Tourn. Inst.* 274. *Boerb. Ind. A.* 295. *Hist. Oxon.* iii. 455. *Pæonia* flore pleno rubro, *J. B.* iii. 493. *Pæonia* fœmina polyanthos, *Chab.* 490.

4. The **white-flower'd Female Piony**. *Pæonia* flore albicante, *Offic.* *Pæonia* flore pleno albicante, *Park. Parad.* 342. *Pæonia* flore exalbido pleno major, *C. B. Pin.* 323. *Raii Hist.* i. 695. *Tourn. Inst.* 274. *Boerb. Ind. A.* 295. *Pæonia* fœmina polyanthos flore albo, *Ger.* 831. *Emac.* 982. *Pæonia* albo flore pleno, five polyanthos alba fœmina, *J. B.* iii. 494.

CHARACTER of Plant and Flower.

The general Character of this Plant, according to *Tournefort* and *Mr. Miller*, is thus: It hath a Flower composed

composed of several Leaves, which are placed orbicularly, and expand in form of a Rose; out of whose Empalement rises the Pointal, which afterwards becomes a Fruit, in which several little Horns, bent downwards, are gathered as it were into a little Head cover'd, opening lengthways, containing many globular Seeds.

The particular Descriptions are as follows :

The **Male Piony** has thick red or brownish Stalks above a Foot long; the Leaves are large, several growing together upon one slender Stem, representing those of the Walnut-tree; the Flowers are large and red (resembling *Roses*) but inclining to a deep Purple; which have (rising in the Middle) several yellow *Antheræ*, which are succeeded by three or four Pods like Horns. These contain round black Seeds as big as some kinds of **Pease**, with which are many Seeds that are crimson or red; and the inner Surfaces of the Pods are also a fine Red. The Root is large and thick.

The **Female Piony** has several Stalks, and more Leaves than the Male, but not so large, having several Divisions on the Edges, and being of a deep green Colour. The Flowers are of a strong suffocating Smell, are something smaller, and of a deeper purple than those of the Male; and having yellow *Antheræ*, Seed-Vessels, and Seeds exactly like the other, but smaller in general, and the Seeds less polish'd.

Another sort of **Piony** called by *Pena*, *Pæonia fæmina Polyanthos*, which is the *Pæonia fæmina multiplex*, a **double Piony**, has Leaves, Roots and Flowers like the common

common **Female Piony**, except that the Leaves are not so much jagged, and that they are of a lighter green Colour. The Roots are something thicker and more tuberous, and the Flowers much larger and fuller (being double) and of a deep red Colour.

There is another **double Piony** with great **white Flowers**, not differing from the former in Leaves, Roots, or Stalks; and another like the common **Piony**, only having Flowers and Leaves much less, and the Stalks shorter, called in *English*, **Maiden or Virgin Piony**, whose red Flowers and Seeds are like that; and also another double one like the white, having pale Flowers. These all grow in our Gardens about *London*.

The sorts which *Mr. Miller* recounts to grow in our Gardens are: 1. The **Male Piony**: 2. The greater **Male Piony** with a flesh-coloured Flower: 3. The common or **Female Piony**: 4. **Female Piony** with a large double red Flower: 5. **Piony** with a lesser double red Flower: 6. **Greater Piony** with a double whitish Flower: 7. **Portugal Piony** with a single sweet-scented Flower. *Tournefort* mentions two and twenty Species of this Plant, none of which, except these mentioned, are to be met with, except in Botanical Gardens. They flower in *May* and *June*, and the Seeds are ripe in *July* and *August*.

MICROSCOPICAL Description.

Piony Seeds (*Fig. 1.*) are oval, notwithstanding what *Tournefort* has said of their being globular; at one Extremity

tremity there arises a little Crest, which in some of them runs downward one third of the Length of the Seed, of the same Colour and Contexture with the rest of its Surface, but in others is only prominent at the Top; this has a whitish Roughness on part of its posterior Edge, as if it was grated, which seems to be the *Umbilicus*. The other Extremity is round for the most part, yet some of them have a Protuberance on the rounder End, but polished and smooth like the rest.

The Surface (notwithstanding its polished shining Aspect to the naked Eye) is exactly like black Shagreen in all respects. This black Covering is a hard Shell, lined with a soft white Membrane, which encloses the *Nucleus*, upon whose Surface appear several whitish Fibres, which seem to have been designed for its better Attachment to the Covering; the *Parenchyma* is of a Straw-colour, or yellowish White. The *Nucleus*, when taken out of the Shell whole, appears exactly of the same Form with the entire Seed, and has, at each Extremity, a round Spot, which appears to be *fungous*, in order to let in the Juices at the *Basis*; and at the *Umbilicus*, to afford a Passage out of the *Parenchyma* to the Rudiments of the Plant; and on the inner Surface of the Shell, there are two Holes, one at each Extremity, which answer to those *fungous* Spots just mentioned. The Seeds are sweetish to the Taste, have little or no Smell, and are about two eighths of an Inch long, and about one fifth in diameter.

V I R T U E S.

This Plant is reckoned among the most efficacious *Cephalicks* and *Deobstruents*; being good against Convulsions in Children, Epilepsies in either Sex, Obstructions of the *Menses* or *Lochia*, and also of the Liver, in any convenient Form. The Forms of the Shop are the *compound Piony Water*, and the *compound Syrup* of the same, both which are excellent in their kinds; yet the Roots or Seeds given in substance with Wine, is very effectual in those Disorders mentioned; or a strong Infusion of the Leaves in Wine will have a very good Effect. *Galen* commends the Root of *Piony* for its Power in curing Convulsions, especially by being worn about the Neck. He gives a remarkable History of Experiments, made by himself, to prove the Efficacy of this Root thus used, in his sixth Book of *Simples*, which I think worth transcribing here, for its Singularity, and shall leave the Reader to judge of it as he pleases. “I saw, says he, a little Boy freed from
 “ Convulsions for eight Months, while he wore it about
 “ his Neck; but when it happened to fall off, he was
 “ immediately seized again with his Disorder; and upon
 “ putting another Piece on, in the Place of the former,
 “ he was instantly freed again. But in order to be more
 “ certain of the Experiment, I took off the Root again,
 “ and he became convuls’d a third time; and cured by
 “ the Application of a piece of a fresh Root in the same
 “ manner again.” This Author thinks that happy Effect is produced by some Change made in the Air we breath,
 by

by the *Effluvia* that fly off from the Root, while it is suspended about the Neck. Women have an old Custom of making a Necklace of the Seeds, in order to cause Children to cut their Teeth easily. *Galen's* Experiment seems to have some reason to influence a favourable Opinion of it in that case; whereas none, that I can produce, can possibly encourage a Notion, that a Child's Gums should be prevented feeling the Protrusion of a Tooth forcing thro' it, by any such Application whatsoever.

T A B. III. Fig. 3, 17.

GRAINS of PARADISE.

GRANA *Paradisi*. I cannot conjecture why these Seeds were called by this Name, except it be from the sudden Ease and Pleasure they produce, as a Carminative in Wind-Colics. They are called in *Greek* Καρδάμυον, *Cardamomum*, by the *Arabians* *Corrumeni*; *Succolaa* by *Avicenna*, and *Mileguetta* or *Melleguetta* by others.

SYNONYMA.

Grana Paradisi, *Offic.* *Ger. Emac.* 1542. Grana Paradisi officinarum, *C. B. Pin.* 413. *Cardamomum majus*, *Barr. Icon.* 571. *Obs.* 1394. *Cardamomum Arabum majus*, *Ger.* 1358. *Cardamomum*, granum Paradisi, *Melleguetta*, *Chab.* 128. *Cardamomi genus maximum*, grana Paradisi, five *Melleguetta*, *J. B. ii.* 204. *Melle-*

guetta, *Jons. D.* Melleguetta, five Cardamomum maximum & Grana Paradisi, *Park. Theat.* 1576. Mellequetta, Grana Paradisi officinarum, *Raii Hist.* ii. 1205.

CHARACTER of Plant and Flower.

Johnson's Character of the Plant that produces these Grains is this: "It is a low herby Plant, the Leaves are four Inches long and three broad, with a thick middle Rib, from which run transverse Fibres; they much, in Shape, resemble those of Cloves. The Fruit is like a great Cod or Husk, in shape like a *Fig* when it groweth upon the Tree, but of a Ruffet Colour, full of small Seeds or Grains of a dark reddish Colour, and of an exceeding hot Taste." A Figure of the Pod, together with that of the lesser *Cardamoms*, shall be exhibited in the next Plate. There is a *Cardamom* having a long Husk with larger angular dark Seeds, the Husk as long as one's Finger; which is the true great *Cardamom*, and instead of which, some erroneously substitute the *Grana Paradisi*, and others the true *Amomum*; and where even this latter is wanting, one of the Species of the *Parsley* is used in its stead in the Shops, by the Name of *Amomum verum*, of which more by and by in its Place. All the *Cardamoms* and *Amomum* are brought from the *East-Indies*, especially from the Coasts of *Mallabar*; and the *Grains of Paradise* are said to grow in *Guinea*; and also that they spring up in *May*, and produce ripe Seeds in *September*.

MICROSCOPICAL Description.

These Seeds are of an irregular Form, but may be said to have a *Basis* and *Apex*; the *Basis* is generally so flat as to render it capable of standing well upon it; the Sides consist of several *Flats* and *Angles*, and the *Apex* looks very much like the Mouth of a Purse drawn or gather'd up close together.

The Body of the Seed is of a reddish brown Colour, the Surface much granulated and rough, and the *Apex*, which is its *Umbilicus*, degenerates from this reddish brown Colour, into a yellow, appearing in little oblong Ridges or Plates.

Upon making a transverse Section of this Seed, a most beautiful Appearance presented itself; the external *Cortex* is very thin, and retains the same Colour thro' its Substance with the outer Surface; this incloses a *black, porous, pitchy* Substance, which is much thicker than the *Cortex*, in close Contact with it, and, at the Angles of the Seed, is pretty considerable. Next to this, the *Parenchyma* appeared, as white as the finest white Salt, and radiated from the Center outward; and in this transverse Section, seemed to have a round *Hole* in the Center of one of the divided Parts, and a *Process* answerable to it in the other: but not being content with this, I made a longitudinal Cut through the Middle, and found the Appearance as *Fig. 17*. Here was represented to my View that Figure in the Center of the white *Parenchyma*, which looks exactly like a modern Vinegar Glass, commonly called a

Crewit ; the Bottom of which tended obliquely towards the *Basis*, and the Top towards the *Apex* of the Seed. The Surface of this part looks polish'd, and the Colour is a yellowish Olive, nor does it look unlike a gummy or resinous Body ; however, we cannot be certain what its Substance is, notwithstanding its great Resemblance to that kind of Matter. The white *Parenchyma* is very singular, being almost divided into two Lobes by this little *Crewit*, whose Top runs up into, or is lost in, a remarkable circular part, which has a Rising towards the *Umbilicus* of the Seed in form of an *Acorn*, and this Rising stands in the open Place, into which the *Purisy Umbilicus* leads. The Taste of this white *Parenchyma* is excessively hot and pungent, and remains so upon the Tongue, after having spit out the chew'd Seed, for a considerable Time ; and bears so great a Resemblance to a volatile Salt, both in this and its white Colour, that one would be almost induced to believe it a perfect *Saline* Substance. The Smell is warm and disagreeable when the Seed is broken ; and as to its natural Dimensions, an ordinary Seed is somewhat more than the eighth of an Inch long, and about an eighth thick.

V I R T U E S.

The *Grains of Paradise* are justly esteem'd a noble Carminative, being particularly remarkable for expelling Wind from the Stomach and Intestines. The first Instance of their Efficacy in this Respect, I have met with, is well worth relating, since which I have many times
seen

seen the same happy Effect produced. A Gentleman with some Company were going out to hunt ; one of the Servants complain'd of Pains in his Belly, and before they rode far, his Pains increased so much as to render him *delirious* ; upon which he threw himself from his Horse, and rolled about, writhing his Body and foaming at the Mouth in a miserable Manner. A Gentleman sent immediately for some pounded **Grains of Paradise**, and ordered some Ale to be warm'd, and gave him a Glas of it with as much of the gross Powder of these Seeds as would lye on a Shilling. But it was proposed by one of the Company to have him blooded first, for fear of an Inflammation from the Warmth of the Dose. This Advice seem'd very rational, yet there was no Person to be had that could bleed ; the Medicine was therefore given without delay, and was not three Minutes in his Stomach before he sat up, open'd his Eyes, and said he was quite easy ; and after breaking Wind both upwards and downwards in a very surprising manner, he was in a few Minutes more, able to mount his Horse and ride with the Company.

I have several times since order'd these with the same Success, using the necessary Precautions that were indicated by the Difference of Age, Sex, or Constitution, and the Heat of the Medicine. In Paralytic Disorders, they are no less efficacious, given in Substance in any convenient Vehicle, and are of great use in *Leucophlegmatic* or *Anasarcal* Habits, taken in the Intervals, between the necessary Evacuations.

T A B.

T A B. III. Fig. 4.

Common *PARSLEY SEED.*

PETROSELINUM, so called from *Petra*, a Rock, and Σέλινον, the Greek Name of *Dioscorides* for *Smallage*. This Name seems to be improperly given to the *Garden* or *common Parsley*, because the *Rock* or *Stone Parsley* is another kind, which growing upon Rocks, requires that Name: this probably was the Reason *Tournefort* called it by the Name of *Apium* only, the French Word for this being *Persil*, the Source of our English Name *Parsley*.

SYNONYMA.

Petroselinum vulgare, *Offic. Park. Theat.* 922. *Petroselinum*, *ejusdem Parad.* 491. *Apium hortense*, *Ger.* 861. *Emac.* 1013. *Raii Hist.* 1448. *Apium hortense*, five *Petroselinum vulgo*, *C. B. Pin.* 153. *Tourn. Inst.* 305. *Elem. Bot.* 254. *Boerb. Ind. A.* 58. *Rupp. flor. Jen.* 229. *Hist. Oxon.* iii. 292. *Apium hortense multis*, quod vulgo *Petroselinum palato gratum*, *J. B.* iii. 97. *Apium*, *Selinum*, *Petroselinum*, *Chab.* 396. *Apium fativum vel hortense vulgatius latifolium planum*, *Mor. umb.* 22.

CHARACTER of Plant and Flower.

The Leaves of *Garden-Parsley* are of a beautiful green Colour, consisting of many fastened together; divided

divided most commonly into three Parts, and also snipt round about the Edges. The Stalk rises above a Cubit high, slender, and something channel'd, on the Top whereof stand Heads, which produce small Flowers; for a more particular Description of which, see **Smallage**.

There is another sort of **Garden-Parsley**, of the same Nature with the former, differing only in having the Leaves finely curled; it is called *Apium vel Petroselinum crispum*, by *Casp. Baub.* **curled Parsley**. The chief use of this is to garnish Dishes, for which Purpose it is sown in Gardens, and is as good for any use as the other, being (according to Mr. *Miller*) only a Variety of that. This Author says, "the great **Garden Parsley** is at present little known to us in *England*, but in *Holland* it is very common in all their Markets; they bring these Roots in Bunches, as we do young Carrots to Market in Summer, and the Roots are much of the same Size; it is called *Petroseline Wortle* by the *Dutch*, who are very fond of it."

Johnson mentions another kind, kept in Gardens, called *Apium sive Petroselinum Virginianum*, or **Virginian Parsley**; it has Leaves like the common, but rounder and of a yellowish green Colour; the Stalks are three Foot high, divided into sundry Branches, whereon grow *Umbels* of whitish Flowers. The Seeds are like, but larger than those of the common, and when they are ripe they commonly sow themselves, the old Roots die, and the young ones bear Seed the second Year after their sowing.

The

The other kinds of Parsley besides these and the Smallage, which Gerard and Johnson enumerate, are, the Mountain Parsley, Macedonian Parsley, Stone Parsley, Corn Parsley or Honewort, Alexander, wild Parsley, Bastard Parsley with white Flowers, Bastard Parsley with red Flowers, Hog's Parsley, Great rough Parsley, Hedge Parsley, Knotted Parsley, and among these the Candy Alexanders. Of these we shall say something in their Turn.

MICROSCOPICAL Description.

The Seeds of this Garden Parsley being of the Umbellated kind, grow two upon a little Stem, whose bifid Stilus supports them like the Ammi or Smallage; they are striated or ribbed like those, having three of such Ribs on the convex Part, spread further asunder, and being much more conspicuous than those of either of the Seeds just mentioned. There is another Rib which runs on each Side of the Seed, which is its lateral Rib, and that which runs round the Edge of the flat Surface, makes it resemble the Edge or Gunnel of a Barge or Lighter, to which each of these bears some resemblance. This Seed is considerably larger than either, and much longer in proportion to their Size; the Colour of the Interstices between the Ribs is a dusky Olive, and the Ribs of an Oaker Yellow. They are pretty round where they rest on the Stem, and run up elliptically to an Apex, where there is a fungous Corona, which is the Umbilicus. In making a transverse Section thro' the Middle of one of them, the

Paren-

Parenchyma appears of the same Form with the *Cortex*, having this remarkable Property, that between the Ridges or Ribs, are Canals, which are form'd of the *Cortex* and the Surface of the *Parenchyma*, and contain a brown *Balsamic Fluid*, and are full of it from one End to the other of the Seed ; and in some Seeds this *Balsam* appears all round between the *Parenchyma* and the *Cortex*. This will be further explained when we come to speak of the *Seseli*, in which this is so apparent, that a transverse View of that Seed will serve for both. The *Parenchyma* is somewhat succulent, and of a greyish Olive-Colour ; the Taste exactly like that of the Plant, which from its common use in many Sauces of our Diet, is well known. An ordinary Seed is one eighth of an Inch long, and about a sixteenth thick.

V I R T U E S.

Parsley is a powerful *Diuretic* taken in any Form, very aperitive, and a great *Deterger* of the Kidneys and Bladder. Its distilled Water has a Place in our Shops, and is a good Vehicle for *diuretic* Medicines in Draughts or Juleps ; yet from this *Balsamic Fluid*, contained in the tubular Ridges mention'd before, I cannot but imagine Decoctions or Infusions of Root, Plant, but especially the Seeds, to be more efficacious than the distill'd Water, altho' this is not without its Value ; because we can be more certain that Infusions (or Decoctions not continued too long upon the Fire) will extract the Contents of any part of the Plant, and retain it by dissolving its *Balsam* or

other matter contain'd, and mixing intimately with it; whereas we cannot be sure that such *Balsam* will go over in Distillation, notwithstanding the Water is impregnated with known Virtues too. I have known a Decoction made with Roots and Seeds of *Parsley*, with some *Peltogy of the Wall* and *Mallows* Leaves, in River-Water, sweeten'd with the brownest Sugar, and given to the Quantity of half a Pint twice a Day, give immediate Relief in a *Strangury*, and discharge plenty of Urine and *Gravel*, to my great Surprise, without Wine or any other of the Ingredients usual in aperitive Decoctions; and have several times since experienced its good Effects, having made it a common *Decoctum Aperiens* in an Infirmary which I now attend.

T A B. III. Fig. 5, 6.

MACE DONIAN PARSLEY SEED.

PETROSELINUM *Macedonicum*. For the Etymology of the *Latin* Name of *Parsley*, see *Fig. 4.* and as to the other, this Species is called *Macedonian* from the Country of that Name where this Plant is a Native.

SYNONYMA.

Petroselinum Macedonicum, Offic. *Petroselinum Macedonicum verum, Ger. 864. Emac. 1016.* *Petroselinum Mace-*

Macedonicum quibusdam, *Park. Theat.* 924. *Apium Macedonicum*, *C. B. Pin.* 154. *Tourn. Inst.* 305. *Elem. Bot.* 254. *Raii Hist.* i. 463. *Hist. Oxon.* iii. 293. *Boerb. Ind. A.* 59. *Apium* five *Petroselinum Macedonicum multis*, *J. B.* iii. 102. *Chab.* 397. *Apium femine villoso seu incano Macedonicum*, *Mor. umb.* 21. *Daucus Macedonicus Apii folio*, *Herm. flor.* ii. 17.

CHARACTER of Plant and Flower.

Several Mistakes have crept into Authors concerning this Seed, as well as that of the **Stone-Parsley**, this being wrongly taken for the former; nor can we be at all sensible from many of those who mention it, what are the true Characters of this Seed, except from Mr. Ray, (whose Words are “*Folia Apio hortensi similia, semen* “*parvum, oblongum, hirsutum, quibus a Reliquis dif-* “*fert.*.) Morison, who calls it *Apium femine villoso* “*seu incano Macedonicum*; and Hermannus, who calls it *Daucus Macedonicus Apii folio*; so that it is easily distinguished from the others only by its Length and Slenderness, and its hoary Surface. Lobel, instead of the **Stone-Parsley** describes this; the Leaves of which are like those of Garden Parsley, the Stalk more than a Foot high, the Tufts something white: “It is only to be found in the “Gardens of the Curious, and of Botanists, and is propagated by sowing the Seeds in the Spring of the Year, “in an open well-exposed Bed of fresh Earth; and in “Summer, when the Plants are come up, they should be “transplanted, some into Pots filled with fresh Earth, “and others into a well-shelter’d dry Border, where

“ they may remain untill they flower, which is not be-
 “ fore the second or third Year ; but those that were
 “ planted in Pots should be shelter’d during the Winter-
 “ Season, under a hot-bed Frame, giving them free open
 “ Air whenever the Weather is mild. These Plants in
 “ the Spring following, may be turn’d out of the Pots
 “ into the full Ground, that their Seeds may be the better
 “ matured.” *Miller.*

MICROSCOPICAL Description.

These are long slender elliptical Seeds, growing like
 the Seeds of other umbelliferous Plants, two together on
 the Stem and *bifid Stilus* ; when they are pulled asunder
 they appear each to have a convex or back Side, and a
 flat Part or Belly. The convex Side, *Fig. 5.* may be
 said, from its Roundness at one End, and Smallness at the
 other, to have a *Basis* and *Apex* ; the former is round,
 and after swelling a little towards the Middle, runs taper
 upwards till within one fifth of its Length there arise two
 rough hairy Processes, one on each side, like Ears, and the
 rest runs to a Point : So that the entire back Surface is a
 near Representation of a *Mouse* lying flat. The Colour
 of the Body of this Seed is a kind of Olive, but the
 hoary Fibres all over are of an Ash-colour, and the
Striæ or Ridges much the same.

The flat Surface, *Fig. 6.* is of a brown Colour, and
 porous, having none of these Fibres upon it ; and is sur-
 rounded by an Edge or Ridge, like those on the Back of
 the Seed, which are also hoary. Upon this Surface the *bifid*
Stilus

Stilus is apparent, one Extremity of which terminates at a hollow part, that may be likened to the under Jaw of the *Mouse*, between the Roots of the Ears; and the other stands loose, to which the fellow Seed was also attach'd.

The Ridges are also hollow like those of the *Garden Parsley*, and contain such a *Balsamic Fluid* as that; but this being so exceedingly slender, requires the greatest Magnifier of the Microscope for *Opake Objects* to discern it. This Seed tastes warmly, not unlike the *Smallage* Seeds, something bitter, of a pleasant Smell, and about an eighth of an Inch long, and about a twentieth broad.

V I R T U E S.

These Seeds are said to agree with those of the former, in their Medicinal Uses in general, and originally were an Ingredient in the *Venice Treacle*; but being scarce here, and not commonly propagated, the Seeds of the common *Parsley* are substituted in its Stead, which have no less Efficacy, if not more than this.

N.B. There is another *Parsley* called *Stone Parsley*, having *hoary* Seeds, which Mr. Ray counts the third kind of *Daucus* of *Dioscorides*, whose *Synonyma* are as follows:

Selinum Montanum, *Offic.* *Selinum* five *Apium peregrinum*, *Park. Theat.* 928. *Apium peregrinum foliis subrotundis*, *C. B. Prod.* 81. *Pin.* 154. *Hist. Oxon.* iii. 293. *Apium femine villosa, incano, peregrinum primum Clusii,*

Clusii, *Mor. umb.* 21. Visnaga minor quorundam, Seli-
num peregrinum Clusii, semine hirsuto, *J. B.* iii. 94.
Daucus tertius Dioscoridis, *Raii Hist.* i. 462. Daucus
peregrinus foliis subrotundis pinnatis, *Herm. Flor.* ii. 17.
The Seeds of this kind I have not yet seen, and shall
proceed to describe the

(T A B. III. Fig. 7, 8.)

Bastard STONE-PARSLEY SEED.

THE Seed of this Plant is, in the Shops, errone-
ously called *Amomum verum*, the true Amomum,
and has been substituted for that a long Time by our
Apothecaries. How this Error has crept in is hard to
conceive, if *Fuchsius* has not first introduced it; for what
he gives for the *Amomum* is in no way like it, but rather
like the Plant of this described Seed. The Figure of the
Amomum shall be exhibited in the next Plate. This,
is, strictly speaking, the true *Petroselinum*, or *Petra-*
pium, **Stone-Parsley**, or **Stone-Smallage**, so called
of *Petra*, a Rock, and *Apium* or *Selinum*, **Smallage**
or **Parsley**; and the Σίσων, *Sison* of *Dioscorides*.

SYNONYMA.

Amomum, *Offic.* *Sison*, *Mor. umb.* 14. *Sison* Dio-
scoridis, *Hist. Oxon.* iii. 283. *Sison vulgare* five *Amomum*
Germanicum, *Park. Theat.* 914. *Sison*, five officinarum
omum,

Amomum, *J. B.* iii. 107. *Mer. Pin.* 113. *Bot. Mons.* 242. *Raii Hist.* i. 443. *Sison cordi*, *Mer. Bot.* 69. *Phyt. Brit.* 114. *Sison*, *Sinon*, *Sinnon*, five officinarum *Amomum*, *Chab.* 398. *Sison*, quod *Amomum* officinis nostris, *C. B. Pin.* 154. *Sium aromaticum*, *Sison officinarum*, *Tourn. Inst.* 308. *Boerb. Ind. A.* 57. *Raii Synop.* iii. 211. *Dill. Cat. Giff.* 139. *Petroselinum Macedonicum* *Fuchsi*, *Ger.* 864. *Emac.* 1016.

CHARACTER of Plant and Flower.

This is a Plant having, according to *Fuchsius*, Leaves that are long and snipped about, but not spread or cut like *Garden Parsley*: they are fastened to a Rib or Stem in the Middle, something like the first Leaves of the lesser *Saxifrage*; the Stalk is slender, a Cubit and a half high, the Flowers on the Tufts are white, the Seed something black, like to that of *Ameos* and *Garden-Parsley*, sweet of Smell, something sharp or biting; the Root is slender and full of Fibres or Strings. *Dioscorides's* Description agrees also with this: *Sison* (says he) *exiguum semen est, in Syria natum, Apio simile, oblongum, nigrum*; that is, *Sison* is a small long black Seed, produced in *Syria*, like *Smallage*, or *Parsley*.

MICROSCOPICAL Description.

These Seeds in their Form, have a Resemblance to the Seeds of both *Garden Parsley* and *Smallage*, but are in a Medium between them as to Size, being smaller and shorter than the former, and larger and longer than

than the latter. They grow two together upon one Stem like the others, from which rises a *bifid Stilus*; yet the Stem of this Seed is thick and clumsy in proportion to the *Stilus*, which in these others of the *Parsley*-kinds is not. They are of a footy Colour, and have a rougher Surface than the **common Parsley**; and the Ribs of the convex Side are farther asunder in proportion than those of that Seed. The Taste and Smell has a near Resemblance to that of those Seeds also.

The Seeds of the **Stone Parsley** have five Ribs, like those of the **common**, and differ from it only in this; that those Hollows which contain the *Balsam* are deeper into the *Parenchyma* of this, than of the **common**, and contain more of it in proportion to its Size.

V I R T U E S.

These Seeds agree with the foregoing in every Intention of Cure.

A short Sketch of some of the other kinds of **Parsley**, promised before, will not be unsuitable to this Place.

CORN-PARSLY, or HONEWORT.

SELINUM *Sii foliis*. This Plant seems to have been first discover'd by *Johnson*, who tells us, he first called it *Sium terrestre*, or *Sium segetum & agrorum*, **Land-Sium**, or the **Corn** or **Field-Sium**. *Sium* from its likeness to that Plant, whose *English* Name is **Upright Water-Parship**; he first described it in the
Year

Year 1620, but had observed it long before, yet knew of no *English* Name for it, till about the Year 1632, when he saw a Gentlewoman gather it in the Wheat-Fields about *Mapledurham* in *Hampshire*, who told him her Mother taught her the use of it, and called it *Honewort*; and called the Swelling she had on her Cheek a *Hone*, but of this she could not tell the Reason.

A Handful of the green Leaves bruised with half a Pint or more of Beer, then strain'd and drank every Morning fasting, was the Medicine for that Swelling, which it cured in a Fortnight's time.

Johnson's Character of this Plant is thus : It grows from Seed like that of *Parsley*, with two long narrow Leaves, then spring two small, round, smooth Leaves indented on the Edges; and so for two or three Pairs of such Leaves, growing on a middle Rib, and a round one at the Top. Thus every Leaf obtains, on its Stalk, several Pairs of small round Leaves opposite to each other, with the odd Leaf at the Top, all indented about the Edges, resembling those of the *Sium odoratum* *Tragi*, but not so big nor brown; among these, several small streaked Stalks arise about two Foot long, sometimes upright, sometimes leaning near the Ground, divided at certain Joints into several other Branches. The Leaves perish successively upward, so that there is scarce a green one to be seen when the Seed is ripe. The Flowers are white both at the Tops and sometimes at the Joints, in irregular *Umbels*; every Flower having five small Leaves, broad at the Top, and in the middle small Chives with

purple Tops, the whole Flower not much exceeding the Bigness of a small Pin's Head ; every Flower is succeeded by two small grey crooked streaked Seeds, like those of *Parsley*, but larger, with a hot aromatic Taste. The Root is small and whitish, with many Threads not so big as *Parsley* Roots. It begins to flower about the Beginning of *July*, and so continues flowering a long time : Part of the Seed is ripe in *August*, and some not till the Beginning of *October* ; so that growing successively ripe, it has fresh Crops of green Leaves all the Winter.

ALEXANDERS.

HIPPOSELINUM, *Horse-Parsley*, in *Greek* ἵπποσέλινον, because it is the largest kind of *Parsley* ; so in *Latin* it was called *Equapium* ; it had also the Name *Olus atrum*, the *black Pot-herb*, by the *Greeks* Σμύρνιον, *Smyrnium*, from its Taste and Smell, resembling *Myrrh*, or because that Plant which the Ancients call'd *Smyrnium*, yielded a like Liquid.

SYNONYMA.

Hippofelinum & smyrnium, *Offic.* Hippofelinum Theophrasti, vel smyrnium Dioscoridis, *C. B. Pin.* 154. Macerone, quibusdam smyrnium, semine magno nigro, *J. B. iii.* 126. *Smyrnium*, *Raii Synop. Tourn. Inst.* 316.

CHARACTER of Plant and Flower.

The Leaves of *Alexanders* are not cut into small Parcels like *Smallage*, but much greater, of a deep green Colour, with a thick Stalk a Foot and a half high ; the Flowers are white, the Seed large and black, bitter to the Taste, and of a spicy Smell ; the Root thick, black without and white within, and yields a Juice that soon condenses, tasting like *Myrrh*.

Tournefort's and *Miller's* Character is: The Flowers are produced in *Umbels*, consisting of several Leaves, which are placed orbicularly and exposed in form of a Rose ; these rest upon an Impalement, which afterwards become pretty thick Seeds, sometimes shaped like a Crescent, gibbous and streaked on one Side, and plain on the other. These Characters answer closely to those of the other foregoing kinds of *Parley*, and their Virtues are the same. They grow in several parts of *England* ; the Seed ripens in *August*, the second Year of its Growth.

Wild PARSLEY.

THIS is a kind which *Johnson* owns he had not observed to grow wild with us, yet he proceeds to describe it: 'Tis like other *Parleys*, having white Flowers and Seeds like *Dill*, and the Plant yielding a milky Juice. He says it was used in some Shops instead of the *Meum*, *Spignel*, and called sometimes *wild Eppe*, from *Apium Sylvestre*, and sometimes *water Eppe*, from *Apium Aquatile*.

Aquatile. This is the *Thysselinum* of Pliny, the *Apium sylvestre lacteo succo turgens*, C. B. Pin. 153. *Apium sylvestre Dodonei*, *Thysselinum quorundam*, *planta lacteo succo turgens*, *locis humidis proveniens*, J. B. ii. 188. There is a second Species of this **Milky Parsley**, which is the *Seseli palustre lactescens*, C. B. Pin. 162. *Seseli palustre lactescens*, *acris*, *foliis foliaceis*, *flore albo*, *semine lato*, J. B. ii. 188. This Plant has a long brownish Root, of a very disagreeable Taste, a Heat that burns the Mouth, which it loses when cultivated; the Stalk is branched and three Cubits long, the Flowers are white in *Umbels*, the Seed broad, foliaceous, and milky. *Morison* says it bears Seed towards the End of Summer. It is called *Thysselinum* of $\Sigma\omega$, *maeto*, *sacra facio*, *sacrifico*, to sacrifice; or rather of $\Sigma\upsilon\mu\alpha\omega$, *suffio*, *adoleo*, to perfume, and *Selinum*, **Parsley**, because the Root of this Plant chew'd, leaves a disagreeable Fume or Flavour in the Mouth. This Plant is good in all the Intentions of a *Diuretic* and *Deobstruent*.

Bastard PARSLEY.

CAUCALIS; of this and its Species in another Place hereafter, with the Figure of its Seed.

T A B.

T A B. III. Fig. 9, 10, 11.

CORIANDER SEED.

Kόριον, and Κορίαννον, *Coriandrum*; either of *Kopis*, *Cimex*, a Bug, the Name of an Insect, and *Andros* the Name of an Island, because the Leaves smell like that Insect, and because it is said to grow plentifully in that Island; or rather of *Kόρη*, *Pupilla*, and *ἄνδρος*, from *ανήρ*, *vir*, because it bears some Resemblance to the Pupil of a Man's Eye, being round.

SYNONYMA.

Coriandrum, *Offic.* 7. *B.* iii. 89. *Chab.* 295. *Raii Hist.* i. 470. *Ger.* 859. *Emac.* 1012. *Coriandrum majus*, *C. B. Pin.* 158. *Tourn. Inst.* 316. *Coriandrum vulgare*, *Park. Theat.* 918.

CHARACTER of Plant and Flower.

The Root of Coriander is strait, small and single; the Stalk round, smooth, and about two Foot high; the Leaves smell very disagreeably, the lower of which are larger than the upper, which are cut into fine Segments like the Leaves of *Fumitory* or *Camomile*. On the Tops of the Stalk and Branches stand white *Umbels* of Flowers, with a little Tincture of red in them. The single Flowers consist of five Leaves, as in other umbelliferous Plants, the outermost of which is the largest, and split almost quite to the Bottom; the next one on each side is split also, one
of

of the Segments being larger than the other ; but the two innermost are the least. To every Flower succeed two Seeds, join'd together in one round channel'd Cover.

Mr. Miller. “ **Coziander** hath a fibrous annual Root ;
 “ the lower Leaves are broad, but the upper Leaves are
 “ deeply cut into fine Segments ; the Petals of the
 “ Flower are unequal, and shaped like a Heart ; the
 “ Fruit is composed of two hemispherical and sometimes
 “ spherical Seeds.

There is another Species of the **Coziander**, called by *Johnson*, *Coriandrum alterum minus odoratum*, **Bastard Coziander**, which is the *Coriandrum minus testiculatum* of *Caspar Baubine*, the lesser testiculated **Coziander**, differing not much from the former in the Leaves ; but, instead of one globular Fruit, having two sticking together like Testicles. The Smell of this is much more disagreeable than that of the former, insomuch that *Morrison* does not make any difference between this and a third Species, called by *C. Baubine*, *Coriandrum alterum Fætidissimum*. The common **Coziander** is cultivated in Gardens and Fields for the Seeds, being much used medically. *Johnson* says, tho' he never sowed it but once in his Garden, it grew afterwards of itself from time to time. Mr. Miller says, he found no Difference between this and the third kind just mentioned, tho' he received the Seeds from the *Leyden* Garden. They are in great Plenty in many Places about *Paris*, and in other Parts of *France*, flowering in *June* and *July*, and the Seed is ripe the latter End of *August*.

MICROSCOPICAL Description.

The Seed of common Coriander is spherical, when intire, and may be said to have two Poles; the lower, or that into which the Stem is fix'd, which forms a fungous Hole, and the upper or little *Apex*, as at *Fig. 9.* this is the *Umbilicus* of the Seed. From one of these *Poles* to the other, several *Ridges* or *Striæ* run like the Lines of Longitude upon the Globe, between which there are several Roughnesses; they are of a yellowish Oaker-Colour, and about the sixth of an Inch in Diameter, or something less.

Each of these Seeds, upon being bruised, divides into two Hemispheres, as *Fig. 10.* which discovers the Edges of the ridged *Cortex*. On the concave side there is a Rising, and, within it, a *Lens*, concave on one Side and convex on the other, *Fig. 11.* as it is turned out of the *Cortex*. On the concave Side is a Rising in the Middle, extending from one *Pole* to the other; and on each side, just below the *Apex*, there is white roundish fungous Spot, rising from the Surface, from each of which runs downward (a little curved) a Ridge, which I take to be resinous; and the Surface is rough, and has a great many Particles of Resin also.

V I R T U E S.

Great Controversies have been held among Authors, concerning the Qualities of *Coriander*, some ranking it among Poisons, and attributing to it cold, narcotic Qualities, whilst others maintain it to be innocent. *Dioscorides* says, If it be taken in too great a Quantity, it affects the Mind dangerously, therefore to be carefully avoided; and

and *J. Baubine* is of Opinion that this Plant is not to be used rashly, because of its malignant Quality, before it is duly prepared. This Notion prevailed so much, that one or two Authors forbid the use even of the Seeds, except they were first steeped three Days in Vinegar. *Tragus* also advises Apothecaries not to use it without being thus prepared, if they have a mind not to administer Poison ; and *Johnson* must have been of that Mind too, since he gives a particular Receipt how to prepare **Coriander** Seed both for Meat and Medicine ; which is, to take the Seeds sufficiently dried, and pour on 'em Wine and Vinegar, and so leave them in Infusion twenty-four Hours ; then dry them and keep them for use. This Opinion was also strongly backed by the Monks that commented upon *Messue*, who thought, because the *Spaniards* made much use of this Plant as a Cordial, many of them became depraved in their Senses, for the Cure of whom many Hospitals have been endow'd. Yet *Lobel* and *Alpinus* contend for the Innocency of the Plant, the latter affirming that nothing is more frequently used by the *Egyptians* in their Victuals, than this green Plant. It is reported that this Country abounds with *Idiots* and *Maniacs* also, which is attributed to the frequent use of this Plant. *C. Hoffman* says, the candy'd Seeds are much used in *Germany* for helping Digestion, and in spitting of Blood and such like. Whatever the Qualities are that are latent in this Plant or its Seeds, we seem not afraid of the latter here ; for many Families season Broth with them, and nothing is more frequently used in
Cawdles,

Carwales, and such like kinds of Diet, than these Seeds. As to their Medicinal use, the Juice of the Plant is commended in *Cataplasms* for the Cure of erisipelatous Eruptions, or to discuss hard Tumors; the Seeds are used in the Intention of Carminatives, and have been frequently prescribed with Cathartics as a Corrector.

T A B. III. Fig. 12, 13, 14, 15.

HARTWORT SEED.

SESELI, *Seselis*, *Seselios*, Σέσελι, some say from σαώ, *servo*, to preserve, and ελλος, *Hinnulus*, a young Colt or Mule, being said to be wholesome and good for their Preservation. It may with more Probability be derived from Σέλις, *Spatium inter Lineas*, the Space between Lines; from the longitudinal Lines on the Surface of the Seed, and the Spaces between them; or from λις, *tenuē & subtile linteum*, fine Linen, or λις pro λισσὴ, *levis*, Light, from the fine foliaceous Wings, which render it so light as to fly off from its Place, when mature enough.

SYNONYMA.

Seseli vulgaris, & *siler montanum*, *Offic.* *Seseli sive siler montanum vulgare*, *J. B. iii. 168.* *Siler montanum officinarum*, *Ger. 892. Emac. 1048. Raii Hist. i. 439.* *Siler montanum, Hist. Oxon. iii. 276.* *Siler montanum majus, Boerb.*

Q

Ind.

*Ind. A. 92. Mor. umb. 7. Siler montanum, vulgo fese-
lios, Park. Theat. 909. Ligusticum quod feseli officina-
rum, C. B. Pin. 162. Tourn. Inst. 323. Elem. Bot. 274.*

CHARACTER of Plant and Flower.

Tournefort brings in this Plant as a Species of the **Lobage**, yet in many Respects it is different from any Species of that Plant, in many Particulars: He has been followed in this by his Translator, the Writer of the compleat Herbal, who has given the Name **Hartwort** to the *Tordylium*; whereas the Plant under our Consideration, which is the *Seseli officinarum*, is now understood to be the **Hartwort**. This Plant has obtained the Name **Sermountain**, which is only a Corruption of the Word *Siler montanum* by the *French* and *Dutch*, under which Name it is described by *Mr. Miller*, who says, " It has a Rose and umbellated Flower, consisting of several Leaves, which are ranged orbicularly, and rest on an Empalement, which becomes a Fruit composed of two large oblong furrowed Seeds, having foliaceous Ridges on one Side. To these Notes may be added, that the Lobes of the Leaves are large, long, and entire, excepting their Extremity, where they are slightly cut into three Parts." I cannot, with some Authors, take this to be the *Seseli Massiliense* of *Dioscorides*, altho' he calls the Seed *Semen oblongum*, because the particular Character of this, is, its having leafy Wings, which he makes no mention of.

The

The Root, says *Gerard*, smells like *Ligusticum*; the Leaves are very much cut or divided like those of Fennel, and broader than those of *Peucedanum*. At the Top of the Stalks grow spoky Tufts like *Angelica*, which bring forth a long and leafy Seed like *Cummin*, of a pale Colour, &c. There is a second kind called by *Lobel*, *Seseli pratense Monspeliensium*, and by *Dodonæus*, *Seseli pratense alterum*, that is something like the former, but having Leaves broader and darker in Colour; the Seeds are smaller, and have scarce any Smell.

The more particular Character from other Authors, is as follows: This Plant rises very high, with an Oser Stalk; the Foot-stalks of the Leaves, which are above a Palm long, embrace the Stalk and Branches as it were with a loose *Vagina* or Sheath, but the Leaves themselves are divided into opposite Wings. The outermost Segments are generally three in Number, resembling the Leaves of the *Cytisus Tragi*, and are oblong, broad, and furnish'd with a sort of blunt Point. The *Umbels* are large and broad, the Seed large with a foliaceous Border or Selvedge, channel'd and oblong, of an acrid and bitterish Taste, like that of Orange-Peel, and near the Taste of *Cummin*. The bushy Root is rugged, as thick as one's Finger, whitish, sweet smelling, and shoots deep into the Ground.

If these Plants thrive well, they will produce Seeds the second Season; otherwise it will be the third Summer before they flower and seed; after which the Roots will abide many Years, and greatly increase in their Size, producing

ducing Seeds every Year. They flower the latter End of *June*, and their Seeds are ripe about the latter End of *August* or Beginning of *September*.

MICROSCOPICAL Description.

This Seed stripped of its foliaceous Wings may be compared to a sort of *Canoo* I have seen, which is too narrow in proportion to its great Length, has a hollow and a convex Side, like that kind of Boat, and is ridged longitudinally on its convex Side (*Fig. 12.*) from End to End, with four principal Ridges, and, between these, with others less considerable. There are, however, some of these Seeds wider than others in proportion, but the Majority are too long for their Breadth, as I have said before.

These principal Ridges are the Support of the Wings, and may be called their Basis, for they rise broad from the Body of the Seed, and run out to a thin Edge, which, being continued, constitute this leafy Border: These are yellowish, and the Spaces between them and the other less considerable Ridges inclining to a brown.

On the concave Side, *Fig. 13.* there is an Edge or *Gunnel*, like that of a Boat, and a considerable Cavity from the Edge; in the Center of which the Vestige of the *Stilus (a)*, which is also *bifid* here, appears from one End to the other. The Edge and this Vestige are also of a yellowish Colour, but the rest of the Surface brown and porous, and the whole Body of the Seed and Ridges shine, as if varnished over with some Oily Substance.

Fig.

Fig. 14. is a View of the convex Side of a Seed divested of its Wings, which is one of the most proportion'd Seeds I could pick out; at the upper Extremity of which a little Process may be perceived to turn or crook back upon the Body; the same may also be discern'd on that of *Fig. 12.* At the Root of this Process, the Opening or *Umbilicus* of the Seed lies.

Among the many Beauties with which this Seed abounds, there is one that is most agreeably surprizing, which I discovered by making a transverse Section of one of them in order to see what its internal Substance consisted of. I no sooner apply'd the cut Surface (*Fig. 15.*) to my *Microscope*, than each of the principal Ridges (which I said above is the *Basis* of the *leafy Wing*) appeared to be a triangular Tube, containing a fine brown *liquid Balsam*, of the Colour of brown *Basilicon*; this was a high Entertainment, as every other curious Discovery that arises by the diligent Inspection of the Seed is, and prompted my examining others in the same manner, and, as I have already mention'd, I found such a Balsam as this common to the several kinds of Parsley Seeds also, as well as to that of the *Bishop's-weed*, and *Smallage*, altho' these are so minute, that I could not be sensible of it, but with Difficulty, and with one of my greatest Magnifiers. There is also something analogous to this in the sweet Fennel and Finoki, not in Tubes of the Husks or Cortex, but rather in spongy Channels that sink into the Surface of the *Parenchyma*, between the Ridges of these last. In our Introduction to this Work,

we

we shall make some Conjectures of the Reasons of the Existence of this *Balsam*, among other things. This Balsam is not confin'd to these four principal Ridges in the *Heartwort*, but appears in several other Places of the Seeds between the Cortex and *Parenchyma*, especially in two Places in the *Sinus* or concave Part; and therefore, in some Seeds, there appear seven or eight Tubes of this Liquid, in others six, but in none less. The Length of an ordinary Seed is one third of an Inch long, the Thickness about an eighth; and the Breadth of each Wing nearly equal to the Thickness of the Body. The Smell is pleasant and aromatic, but the Taste is bitter, very like that of Camomile Flowers, but somewhat warmer.

V I R T U E S.

These were always accounted a Carminative of great Note, and have a Place in the *Theriaca Andromachi*; and altho' the use of this Plant is not so frequent, yet, from what I find it contains, I cannot but believe it is endow'd with many more Virtues than we have hitherto taken Pains to explore. The Plant is a great Aperitive, and therefore good in all Obstructions in both Sexes. It is said that the Root drank in Wine, or externally apply'd, promotes Urine and menstrual Discharges; and was thought to resist Poison, and cure the Bites of venomous Creatures. From this last Opinion it had a Place given it in the *Theriaca* just mention'd; and both Root and Seed, from their warm and bitter Qualities, are good to help *Digestion*, and *Colic* Pains arising from crude Humors
or

or Wind. It is commended by *Boerhaave*, as having a most attenuating and aromatic Virtue, and therefore is thought to have a Power of correcting the Disorders of a cold Phlegmatic Habit of Body; and is an excellent Alexipharmic, Diuretic, and Antiscorbutic Medicine. The *Ligurians*, among whom it grows in plenty, make great use of these Seeds in their Meats, whence probably those Authors, who make this Plant a Species of the *Ligusticum*, called it by that Name from *Liguria*.

T A B. III. Fig. 16.

White H E N B A N E S E E D.

HYOSCYAMUS, so called of ὅς *sus*, νύκτος *fabā*, a Bean, *Swine's Bean*; whence the *Greek* Name according to *Dioscorides*, is Ὑοσνύκτος. This Plant is called by that Name from its destructive Quality, first discovered in this Animal by eating it; for as soon as it enters the Stomach, they are seized with Convulsions and other uneasy Symptoms, which *Ælian* says they cure by hasting to the Water and devouring Crabs; others imagin'd they sought the Water only to immerse themselves, but that Author's Testimony seems most prevalent with others that quote him. Our *English* Name *Henbane*, seems to have been derived from the destructive Quality of the Seeds eaten by Hens or other Fowls; and has greater Propriety to it than the *Greek* Word, that only signifying

Fabā,

Faba, the Bean of Swine, as if all Beans were destructive; whereas *Henbane* comes from *Bana*, the Saxon Word for a *Murder* or *Slayer*, *Ruin*, *Destruction*; that is to say, the *Killer* or *Bane* of *Hens*. Conformable to this Notion, *Matthioli*, in his Comments upon *Dioscorides*, tells us, he was a Witness to the bad Effects of the Seeds eaten by Children, that they became so much depraved in their Senses, that their Parents believ'd them bewitched; hence the People called this Plant by the Name *Disturbio*, because it alienated the Understanding of those who eat the Seeds. He further adds, that Birds (especially of the *Gallinaceous* kinds) and Fishes, die in a little time after eating them.

This Plant was also called *Apollinaris* for the same Reason, which comes from *ἀπο* and *ὄλλω*, *perdo*, to destroy.

SYNONYMA.

Hyoscyamus albus, *Offic.* *J.* *B.* iii. 627. *Ger.* 283. *Emac.* 353. *Park. Theat.* 262. *Raii Hist.* i. 712. *Chab.* 525. *Hyoscyamus albus major*, vel *tertius Dioscoridis* & *quartus Plinii*, *C. B. Pin.* 169. *Hist. Oxon.* ii. 494. *Tourn. Inst.* 118. *Elem. Bot.* 98. *Boerb. Ind. A.* 229.

CHARACTER of Plant and Flower.

There are several sorts of this Plant, which deserve more to be observed than used, especially that commonly called by Authors, *Hyoscyamus niger vulgaris*, black *Henbane*, its noxious Qualities being well known, and being more plenty on every Ditch and old Dunghill, than
the

the other kinds: Mr. *Miller* gives us an Account of three Children, who had eaten the Seeds of this kind of *Henbane*, near *Tottenham-Court*, two of which slept two Days and two Nights before they could be awakened, and were recovered with difficulty ; but the third, being older and stronger, escaped better. These things are of use to be known, that Parents may be cautious of letting their Children stray about the Fields, without proper Persons to attend them closely.

The general Character from *Tournefort* and Mr. *Miller* is: The Leaves are soft and hairy, growing alternately upon the Branches; the Cup of the Flower is short and Bell-shaped, and divided into five Segments; the Flower consists of one Leaf, the Bottom part of which is tubular, but is expanded at the Top, and divided into five Segments, having five obtuse Stamina. The Fruit, which is inclosed with the Calyx, resembles a Pot with the Cover to it, and is divided by an intermediate Partition into two Cells, which contain many small Seeds.

The Leaves of the *white Henbane* are more hairy and whiter, but smaller than those of the *black*, and the Stalk has more of the soft white Down; the Flower and the Leaves, which encompass the Seed-Vessels, are streaked, and much more white and hairy; the *Seed-pots* are like those of the *black Henbane*, except that the five Segments of the Calyx, which encloses the *Seed-pot* of the latter, have prickly Points, which those of the *white* have not.

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As to the other Species of this Plant (such as, The great Henbane like the white with a dark purple Bottom to the Flower; the lesser Henbane like the white, with a green Bottom; Henbane with a reddish colour'd Flower, and the great yellow Henbane of Candia;) it is of no great Importance to be acquainted with them; therefore we shall proceed to describe the Seeds of the white, now in use in our Shops, which differ not from those of the greater white and lesser white Henbane just mentioned; only adding, that they flower in *June*, and now about the Middle of *July* I find the Seed-pots of the black Henbane yet green, and filled with the Seeds, which are of a reddish Colour, and of their proper Form, but moist and clammy; and believe (notwithstanding what *Johnson* upon *Gerard* says of the Seeds being ripe in *October*) these Seeds I have before me would be perfectly ripe about the End of *August* or Beginning of *September*.

MICROSCOPICAL Description.

After the *Calyx* has split and crack'd by drying, the Seed-pot comes to be exposed to the Heat of the *Sun*, which also grows dry, by which the *Lid* or *Cover* becomes loose, having no other visible Attachment to keep it on the Edge of the Pot, but its Moisture; which in some measure helps to keep it there by Agglutination, as well as by the Squeezing or Pressure of the Segments of the *Calyx*. But this Moisture exhaling, and the *Calyx*, as I said before, splitting off, the *Lid* being now dry, blows

blows off with the first Blast of Wind, and scatters the Seeds, which by this time are hard and ripe.

When the Seeds are ripe, they are of a light Colour, like white-brown Paper, and incline to a triangular Figure, whose Angles are rounded off. They are depressed on both sides, so as to become pretty flat, and their whole Surface is cellular; the *Cells* have no particular Form, but are somewhat irregular, and the Ridges that form them are pretty eminent. As the Drawing appears, the Seeds may be said to have a *Basis* and an *Apex*; the former has no other particular Mark than the *Cells*, but the latter has a kind of Notch indented downward from the Top, which is the *Umbilicus* of the Seed. The *Parenchyma* appears of a greyish Colour, having no discernable Smell nor Taste; a middling Grain is about a sixteenth of an Inch long, and not quite so broad in the broadest Part.

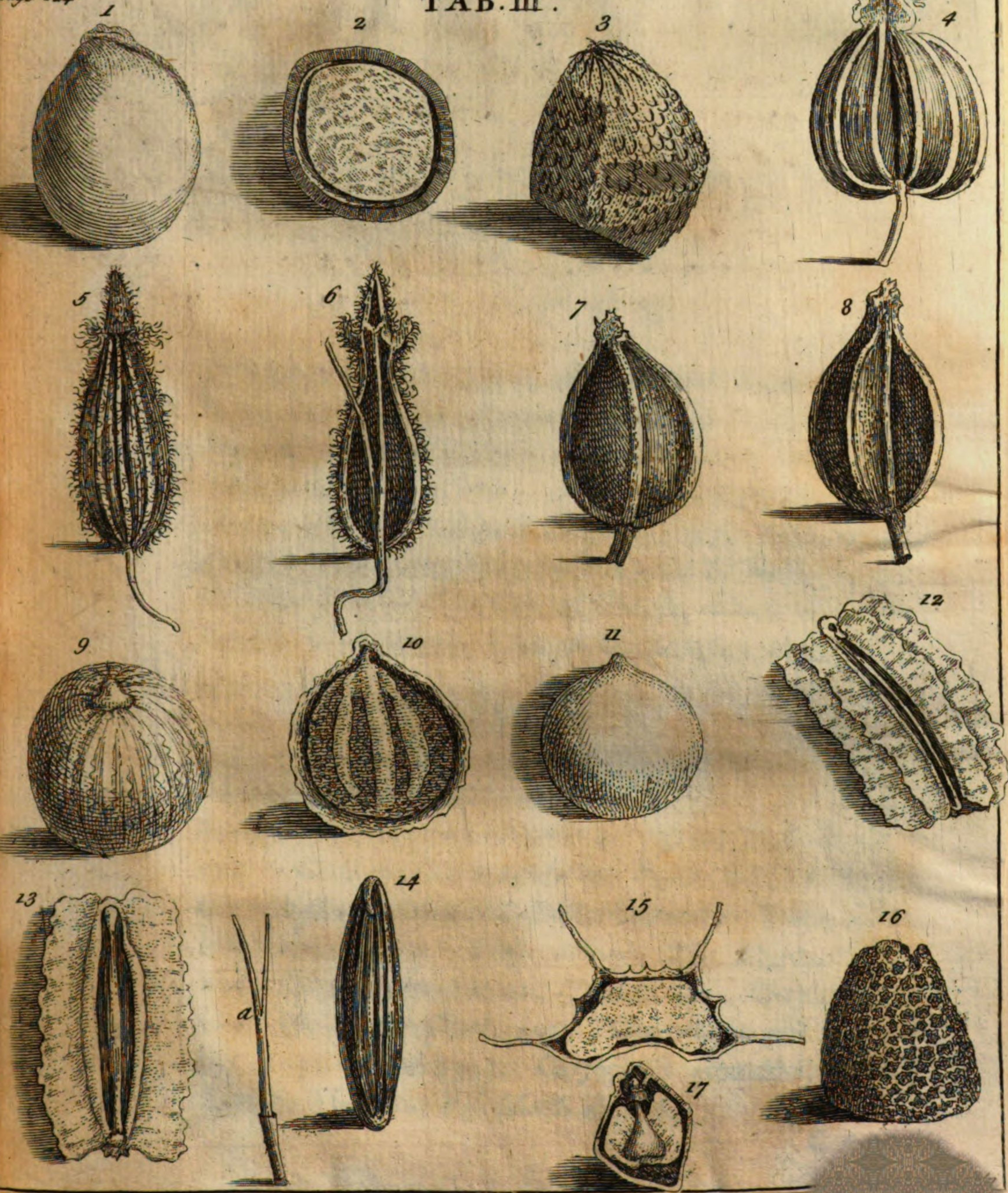
V I R T U E S.

The Ancients ventured to administer the black Henbane internally, as a *Narcotic*, not without much Hazard and Danger of the Patient's Life; but the ill Effects being at length notorious, notwithstanding all Endeavours to render it a safe Medicine, it was confined to external uses only.

Dioscorides gave it, to the Quantity of half a Scruple, with Poppy Seeds, to cure the inordinate menstrual Discharge, or any other Hemorrhage. He extolls the Leaves bruised either with Barley-Meal, or alone, by way

of Cataplasm, for asswaging all inflammatory Tumours of the Breasts, Joints, or Scrotum, and for easing Pain; says, it cures Agues, and stops Defluxions on the Lungs, Eyes, or any other Part. Others apply'd it with Success to ease the Pains of the *Gout*, boiled in Milk, and the Uneasiness of Breasts turgid with Milk after Delivery. This is a Custom in some Country Places at this Time, or heating the large Leaves under hot Embers and applying them. The Seeds bruised in Wine were apply'd for the same Purpose. *C. Hoffman* says, the expressed Oil of the Seeds causes Sleep, by only anointing the Temples with it; and *Tragus* commends it for Pains in the Ears, either alone, or mix'd with *Castor* and *Saffron*. *Helidæus* gave the Seeds with *Conserve of Roses* for a Spitting of Blood, with great Success; and the memorable *Mr. Boyle* has, in his *Treatise de Utilitate Philosophiæ naturalis*, a Recipe for any *Hæmorrhage*. "Take of *Henbane* and white Poppy
 "Seeds two Drams, *Conserve of Roses* two Ounces, re-
 "duce them into the Form of an Electuary; the Dose,
 "the Quantity of a Nutmeg." The above mentioned *Hoffman* and *Buxbaums* affirm, that the Oil prepared from the Seeds, by anointing the Loins and *Perinæum*, will stop a *Profluvium sanguinis* and the *Gonorrhæa*. The white *Henbane*, notwithstanding the Virtues of this, is solely in use; being of a milder and much safer Nature, and is order'd for the same Intentions with those of the former; however, even this is grown into disuse since the the *Materia Medica* abounds with things to take inwardly of more Efficacy and less Danger. Yet

in



REHAT

in external Applications both these may be used safely, and are more to be depended on for easing Pain, than many others now in use.

T A B. IV. Fig. 1, 2, 3.

C L O V E S.

CARYOPHYLLUS, of the *Greek* Καρύς Φυλλον, *nucis folium*, the Leaf of a Nut; the Reason of this Etymology does not seem obvious from any thing appearing about the **Clove**. It was also called, in *Latin*, *Clavus*, from its Likeness to a Nail, with much more Propriety, since this Fruit bears a great Resemblance to it: The *French* call it *Clou de Gyrofle*, which with our *English* Word **Clove**, seem to be derived from *Clavus*.

S Y N O N Y M A.

Caryophyllus, *Offic.* Caryophyllus aromaticus fructu oblongo, *C. B. Pin.* 410. *Breyn. Prod.* ii. 25. *Raii Hist.* ii. 1508. Caryophyllus aromaticus vulgaris, *Jons. Dendr.* 174. Caryophyllus aromaticus, *Ogilb. Chin.* i. 223. Caryophyllus aromaticus Indiae Orientalis, fructu clavato, monopyreno. *Pluk. Almag.* 88. *Phytog. Tab.* 155. Caryophyllus Indicus, *J. B.* i. 423. Caryophylli, *Chab.* 32. *Park. Theat.* 1577. Caryophilli veri Clusii, *Ger.* 1351. *Emac.* 1535. Caryophilli aromatici, *Mont. Exot.* 9. Tf-hinka, *Pis. Mant. A.* 177.

CHARACTER of *Plant and Flower.*

The *Hort. Malabar.* mentions, and has Figures of, three or four kinds, and *Dale* mentions two sorts of **Cloves** :
 “ The first, says he, are the *Caryophylli*, which are the
 “ unripe Fruit, being long like a Nail, angular, wrink-
 “ led and depressed, and of a rusty Colour ; remarka-
 “ ble for having at the Top a Division of four little
 “ *Apices* disposed like a Star, with a little Head in the
 “ Middle, which is convex and concave, the Rudiment
 “ of the future Flower ; the second sort are called *Antho-*
 “ *phylli*, which are the same Fruit, now mature, black
 “ and long like a Nail, like the former, but thicker
 “ and more swelled, including a long dark Grain under
 “ a hard *Cortex*.” This last I never saw, the true Struc-
 ture of the former shall be exhibited in my Microscopical Description hereafter. In the mean time it will be worth while here to mention what *Gerard* says of it chiefly from *Clusius*, and *Garcias ab Horto*.

The **Clove-Tree** groweth great, in form like unto the *Bay-Tree*, the Trunk or Body whereof is covered with a russet Bark ; the Branches are many, long, and very brittle, whereupon do grow Leaves like those of the *Bay-Tree*, but somewhat narrower ; amongst which come the Flowers, white at first, after, of a greenish Colour, waxing of a dark red Colour in the End, which Flowers are the very Cloves when they grow hard ; and afterwards when they are dry'd in the Sun, they become of that dusky black Colour which we daily see, wherein they
 con-

continue. For those that we esteem are beaten down before they are ripe, and are suffered to lie on the Ground till they are thoroughly dried, where there is neither Grass, Weeds, nor any kind of Herbs to hinder it ; because the Tree draws to itself the Nourishment a great Way round, so that nothing else can grow there for want of Moisture ; therefore the Place is the more convenient for drying the Cloves. Contrarywise, that gross kind of Cloves which hath been supposed to be the Male, are nothing else than the Fruit of the same Tree, tarrying there untill it fall down of itself, where by reason of its long lying, and meeting with some Rain in the mean time, it loses the quick Taste that the others have. Some have called these *Fusti*, whereof we may *English* them Fusses. Some affirm, that the Flowers surpass all other Flowers in Sweetness, when they are green ; and hold the Opinion, that the hardened Flowers are not the Cloves themselves (as we have written) but think them rather to be the Seat or Husk, wherein the Flowers grow : The greater Number hold the former Opinion. And further, that the Trees are increased without Labour, as grafting, planting, or other Industry ; but by the falling of the Fruit, which bear within eight Years after they are risen up, and so continue bearing for an hundred Years together, as the Inhabitants of that Country do affirm.

Clusius however affirms particularly, that several Officers and Merchants on board a Fleet that sailed to *Java*, and thence to the *Moluccas*, assured him, that the Clove-Tree is tall, and not less than our ordinary *Apple* or *Pear-Trees* ;

Trees ; and that they grow chiefly in *Amboyna*, *Ternate*, *Motir*, *Bacian*, *Barigeran*, *Makian*, and *Tidare*, and that they are found in some other neighbouring Islands, but in small Quantities, but that the best are in the two last-named Places ; and that from the most diligent Enquiry, he understood, the Flowers are like those of the *Cherry-Tree*, not white, but of an elegant blueish Colour, each Leaf of which had three white Veins or Rays, and the *Stamina* in the Middle of the Flower were a fine Purple. He adds, that the **Clove** is no more than the Rudiment of the Fruit ; and that among those brought to *Antwerp*, he found a blackish red Gum, having, when thrown into the Fire, the same Smell of **Cloves** ; this he conjectures might be the *Gummi Caryoph.* mentioned by *Avicenna* ; but *Garcia* says, he has enquired of all those who brought Cloves from the East, but never met any who saw the Gum.

MICROSCOPICAL Description.

Those Authors who compared the **Clove**, (*Fig. 1.*) to a Nail, were not much amiss in the Idea form'd of it, only it is blunt at the Point. It may therefore be considered as having a Head and a Body. The Head consists of a Ball which is pretty circular, yet in a great many, it has a Tendency to a quadrangular Figure, has a rugous Surface, and is of an Oaker Colour : All those I have inspected were sometimes hollow, sometimes filled with a spongy dark Substance, as if it had been a *Nucleus* shrivelled up for want of Maturity. This seems to confirm
the

the Opinion that the **Cloves** are gathered green, because if they had been thoroughly ripe at the Time of taking them from the Trees, the *Nucleus* would be full and plump.

When the capsular Head is pulled off, there come into view four *Apices* (*Fig. 2.*) whose Points being extended horizontally, form a *Quadrangle*; they are hollowed on the upper Part like a Spoon, turning up a little at the Ends, and forming one general Cavity in the Center; this Cavity contains a regular Rising, which is circular; in some more round and plump, in others having a thin Edge, and appearing like a little Cistern, with a Stump or Process in the Middle. Under this stellated hollow Part, the Body of the **Clove** commences, which is of a brown Colour, very rough, and depressed in several Places longitudinally; in most of them the Body runs flattish downwards, with a sort of Rising in the Middle, and a Depression on each side, as at *Fig. 1.* In making a transverse Section through the Middle, the whole internal Substance seems cellular and spongy; but consisting of three different Colours: The Innermost is pretty much like *Rhubarb*, of a yellowish Hue, the next to that is more compact in its Substance, and inclines to a brown, which again becomes more cellular, and of a lighter brown, and looks like a candy'd Substance towards the outward Part. As to the Taste and Smell, they are well known to be the most agreeably aromatic of any *Spice*, except the *Nutmeg*; and as to their Size, a middling **Clove** is

S

above

above half an Inch long, and about one Eighth of an Inch broad.

V I R T U E S.

The **Cloves** are cardiac, cephalic, and stomachic, are of a drying, warming, and discutient Nature, and are good in *Lipothymia*, *Vertigo*, and Crudities of the Stomach; and altho' they are not so much used in Medicine as in the Kitchen in general, yet the essential Oil which they abound with, is necessary in many Respects; it is a noble Warmer of cold Habits of Body, and a good Correcter of Cathartics, as it stands in the *Pill. ex duobus*; and in the *Elect. Caryocostinum*, the Powder of the Clove stands as a principal Ingredient, having as great a Share in the Efficacy of the Medicine, as any other part of the Composition. The Oil is often used, drop'd on a Bit of Cotton, to put into a hollow aking Tooth, which frequently eases the Pain, but not so often as when the Cotton is also impregnated with some Drops of *Liquid Laudanum* at the same time.

It is reported, that the *Portugal* Women of the *East-Indies* distill a Water from the green **Cloves**, which is esteem'd a most grateful and efficacious Cordial; and that the *Indians* extract a sort of Oyl, or yellowish thick Butter, smelling like the **Cloves** themselves, with which they cure Wounds or Bruises. They are said also to be good for clearing the Sight: and the Powder, to the Quantity of three or four Drams, taken with Milk, to provoke Venery.

T A B. IV. Fig. 4, 5,

Black P E P P E R.

PIPER, so called in *Latin* from the *Greek* Name Πέπερι of *Dioscorides*, which is derived of πεπτω, *coquo*, to boil, because of its Heat, or, as one Author has it, *quod calore suo coctionem juvat*, because it assists Concoction by its Heat. Some derive the Word *Piper* of πῦρ, *ignis*, Fire; a Derivation no less adapted to the Nature of *Pepper*, than the former.

SYNONYMA.

Piper nigrum, *Offic. Ger.* 1355. *Emac.* 1538. *Park. Theat.* 1603. *J. B.* ii. 181. *Piper nigrum*, *Melanopiper*, *Mont. Exot.* 9. *Piper nigrum Clusii*, *Chab.* 125. *Piper rotundum nigrum*, *C. B. Pin.* 411. *Raii Hist.* ii. 1341. *Pluk. Almag.* 297. *Phytog.* cccxxxvii. f. i. *Commel. Flor. Mal.* 215. *Lada*, aliis *Molanga*, five *piper aromaticum*, *Pis. Mant. A.* 492. *Piper rotundum ex Malabara*, foliis latis quinque nerviis albicantibus, *Herm. Mus. Zeylan.* 32. *Molago-Codi*, *Hort. Mal.* vii. 23. *Tab.* 12.

CHARACTER of Plant and Flower.

The following Description we have from *Clusius*, which is also handed down by *Gerard*: viz. The Plant that bears the *black Pepper* grows up like a Vine,

3 2

among

among Bushes, where it grows naturally ; but when matured, it is planted at the Roots of Date-Trees, whereon it takes hold, and climbs to the Top by the Help of its Claspers. The Leaves are few in Number, having only one at each Joint, opposite to which, in the general Place of a fellow Leaf, grows a Bunch of the Fruit, and thus the Leaf and Fruit grow alternately to the very Top. The Leaves are much like those of *Ivy*, but thinner and sharp-pointed, and are about two Inches over (sometimes larger) and four long, having fine strong Nerves to each. The Fruit grows in Clusters upon long Stalks, being the Bunches just mentioned, having some Resemblance to Bunches of *Currants*. The Root is a creeping Root ; for the Branches that lye on the Ground shoot new fibrous Roots at their Joints.

This agrees with what another Author has given concerning this Fruit : He says, the black Pepper grows upon a Plant that climbs, and twists about its Support, and bears large oval, sharp-pointed Leaves, full of large Nerves ; and opposite thereto, grow long Spikes of *monopetalous Flowers* cut into three Parts, and succeeded by Bunches of the Grains of Pepper, round, of a dark brown Colour, with their outside Bark wrinkled. This Fruit grows in *Malabar, Java, Sunda*, and (it is said) in *China* in great Plenty. The Plant is said to rise in the Beginning of Spring, and the Pepper is gather'd in *August*. Dale's Character of this Plant is : "*Notæ,*
"*Planta est sarmentosa, volubilis, foliis subrotundis,*
"*acutis*"

“ *acuminatis, nervosis, flosculis monopetalis tripartitis,*
 “ *fructu rotundo, racemoso.*

MICROSCOPICAL Description.

This kind of **Pepper** (*Fig. 4.*) has obtained the Name of *Rotundum*, not from its great Roundness, for the *Rugæ* upon its Surface hinder its being uniformly of that Shape ; but because the Roundness of this is a Contrast to the Shape of that commonly called the **long Pepper**. The Hollows between these Wrinkles are deep, or in other Words, the Wrinkles or Ridges are very high, and both they and the Interstices are granulated and sandy. I cannot imagine with some, that these Wrinkles are occasioned by the shrinking away of the *Nucleus* alone, because they seem (by viewing several Sections of the Grains) to be designed by Nature for some particular use, regarding their Welfare, being formed in a particular Manner, and the *Nuclei* being sound Grains.

In viewing a transverse Section, made through the Middle, there appears within the wrinkled *Cortex*, between that and the Covering of the *Nucleus*, a dark spongy Substance, which in some Places looks in Flakes ; this seems to contain no Moisture, but rather a kind of dry dusty Matter.

At the upper End of this Grain, the little Process that appears prominent, where two or three of the *Rugæ* meet, is the *Umbilicus* of the **black Pepper**, and answers exactly to a hollow Space immediately under it, as at *Fig. 5.* which comes through the *Cortex* of the *Nucleus*, and,
 by

by a Duplicature formed of that Covering, opens upon the internal Surface of it.

The *Nucleus* lies in pretty close Contact with its Covering, but not so close, as not to be able to discern a manifest Distance between them. Its *Parenchyma* appears on the outer part of a dark greenish Colour, and grows lighter inwards, insensibly, till it comes to a yellowish white, and opens in the Center into an elliptical Cavity, which is quite white within, and very porous; and which I could never find to contain any thing, notwithstanding I cut hundreds of them. This *Parenchyma*, altho' it seems clammy or shining, yet has something of the Appearance of *Sal Martis*.

The Taste and Smell of **black Pepper** are extreamly hot and pungent, having a near Resemblance to the **Grains of Paradise** in these two Respects, without the least Affinity either to the **Clove** or **Jamaica Pepper**, in their fine aromatic Flavour. A moderate Grain of this Fruit is somewhat less than two Eighths of an Inch in diameter.

Since Authors, and the vulgar Opinion, have, for many Years past, made a Distinction between **black** and **white Pepper**, we shall give the latter a Place here, with a separate Explanation, lest the *Synonyma* of different Describers may not be understood, and in order to clear up what I take to be a vulgar Error.

TAB.

TAB. IV. Fig. 6.

White P E P P E R.

SYNONYMA.

PIPER album. *Offic. Ger.* 1355. *Emac.* 1538.
Park. Theat. 1603. *J. B.* ii. 181. Piper rotundum
 album, *C. B. Pin.* 411. *Raii Hist.* ii. 1342. *Pluk. Al-*
mag. 297. Piper album, Leucopiper, *Mont. Exot.* 9.

CHARACTER of Plant and Flower.

Whether there be a *white Pepper-Tree*, or Plant, besides the Black above described, has not yet clearly appeared; and the Uncertainty that reigns amongst those who have treated of it, seems to point out, that there is not. *Clusius* received what Information he had concerning both, from certain *Hollanders*, who brought him some Branches as Specimens, from the *East-Indies*, of the Plant with the Seeds or Fruit upon them; he accordingly describes them, that is, he gives a *Cut* of a Branch with Leaves and Bunches of the *black Pepper*, and only a single Bunch of what he calls the *white*, without the Branch or Leaves. *Gerard* copies him in both, and has the following uncertain Conjecture about it: "The Plant, says he, that
 " brings *white Pepper*, is not to be distinguished from
 " the other Plant, but only by the Colour of the Fruit,
 " no more than a Vine that beareth *black Grapes*, from
 " that

“ that which bringeth *white*: and of some it is thought
 “ that the self-same Plant doth sometimes change itself
 “ from *black* to *white*, as divers other Plants do. Nei-
 “ ther *Clusius*, nor any other that I have yet met with,
 “ have delivered us any thing certain of the Plant
 “ whereon white Pepper grows. *Clusius* only hath given
 “ us the Manner how it grows upon the Stalks, as you
 “ may see it here exprefs'd.

Now it is odd there should be no better Account of the Plant bearing the *white*, since that of the *black* is described with some Certainty: this makes a Report seem more certain, which I find mentioned by two or three Authors: That the *white Pepper* is factitious, and that the manner of preparing it is, *to put a Quantity of full ripe black Pepper into maceration, either in Water or a Trench, till the external rugous Bark comes off, then washing them well till the Grains are pretty clear, they are dried in Chalk or white Ashes, and winnow'd, and so put up in Bags for Sale.* This is done by the Inhabitants where it grows, and also (it is now said) by the *Dutch*, who altho' they had favoured *Clusius* with a Branch of the *black Pepper*, yet brought him no Leaves or Branches of the *white*; and what *Clusius* knew of the *white*, was only, as he owns himself, that he saw at *Lisbon* some *white Pepper*, and brought some away with him from thence; that this kind was much neglected there, and that at *Antwerp* among the Perfumers, the *white* is sometimes found mixed with the *black*. The same may be said among our Grocers, for whosoever buys a Quantity
 of

of the black will have many Grains of the white among it; that is, of some black whose Bark has fallen off. We find this is what produced *Clusius's* Mistake, and also that the Figure he gives of a Bunch of what he calls **white Pepper**, was taken from a Bunch he found preserved with some *Ginger-Roots* in Pickle at *Antwerp*, which can be no satisfactory Account, for the *Pickle* was very capable of taking off the Bark of every Grain upon the Bunch. Hence we may conclude *Clusius* had no Knowledge of the Manner of making factitious **white**, of the **black Pepper**. Now if the Price of the **white** is always so much more than that of the **black**, in proportion to the Retailer's Price at this time in *London*, the **black** being now retailed at *three Halfpence* per Ounce, and the **white** at *four Pence* per Ounce, it was well worth while to deceive Mankind, by concealing (in the best manner they could) this *Manufacture*.

In the great *Dr. Mead's* Manuscript of *Paulus Hermannus's* Lectures, p. 187. we find the same thing practised by the *Hollanders* in his time, who adds, that there is a Plant which naturally produces the **white Pepper**, which he affirms he has proved in his Garden at *Ceilon*, but that this kind is so scarce every where, as to afford no Quantity for Traffick; but the industrious Merchants, in order to make up for the Want of this kind, were ready to favour the World with immense Quantities of their factitious **white Pepper**.

The *Hortus Malabaricus* mentions no other than this, made out of the **black**, nor is there among all Authors

I have read about it, any one but the above Author, who says any thing positively about a natural Plant for **white Pepper**. In the abovenamed Book, the Progress of the Fruit runs thus: "First they are green and smooth in Surface, **then red**, and when ripe, are gather'd, which, being exposed to the Sun seven or eight Days, grow black. The Tree flowers once a Year, sometimes twice, and the **Pepper** is gathered four Months after. It is raised by Slips or Pieces of the Branches thrust into the Ground, as Oziers are commonly raised by our Farmers, *Hort. Malabar. Pars VII.*

None of the Ancients had a true Notion of **Pepper**. *Dioscorides* erroneously supposed that the first Appearance of Pepper was in a Fruit like a Pod; which, says he, is the **long Pepper**, within which something like *Millet* is contained, which after becomes perfect Pepper; for that this long Fruit splitting, sends forth Bunches bearing those Grains we see. *Pliny* thought the Trees of *Pepper* were like the *Juniper*, differing only in their having a Fruit like a *Pease-cod*, which being pulled and dried in the Sun, became the *long Pepper*; and agrees with *Dioscorides* in his Error, that when these *Pods* are left to grow more ripe, they split and shew the **white Pepper**, which being baked or dried in the Sun, are changed in *Rugæ* and *Colour*. These were all Conjectures, for want of proper Intelligence from those Regions where this Fruit grows; and certainly from this, and many other Instances of the Ignorance of the Ancients in their Geographical Tracts, as well as their Notions of natural History, we may easily see

see that no Correspondence was carry'd on between different Nations; that neighbouring People were Strangers to each other in all things, except their Ravages and Incursions on each other's Borders; and consequently that the Books of many of the Ancients are stuffed with Accounts, merely conjectural, superstitious, or fabulous.

As to the making **white Pepper** of the **black**, I cannot imagine it at all mended by the Operation; for as the *Nucleus* of the black, divested of the external *Cortex*, is excessively hot and pungent, it may surely be render'd worse, by taking away that outward Substance design'd by Nature to temperate its violent Heat, and render it more efficacious and safe; for certainly the *Cortex* has its use, as a principal Ingredient with what it covers, since it has a Smell and Taste peculiar to itself. Indeed if it had not, but was quite insipid and void of either, there would be some Reason for cleansing the *Nucleus* of this, of a useless Husk, as well as any other; therefore I am inclin'd to think, that the **black Pepper** is to be preferred both in our Sauces and Medicine to the **white**, for these Reasons; and accordingly we find a singular Instance in that most excellent Powder of Dr. Mead against the Bite of a *Mad Dog*, commonly called the *Pulvis Antilyssus*; where the entire **black Pepper** is order'd. Now certainly the ingenious Contriver of this Medicine, if he had not seen an Excellence in the entire **black Pepper** for his Purpose, he would have rather chosen that which was most in *fashion* and *dearest* (which are too often prevailing Motives among us in our Choice of things) or would have order'd the other to be cleansed of its *Bark*.

This *Bark* carefully separated has a fine *aromatic* Smell and Taste, and something saline in the latter without any Pungency.

MICROSCOPICAL Description.

Upon dissecting this Grain, there appears no manner of difference between it and the **black Pepper** in its inner Substance, but in every Particular they are like the same; which is one of the strongest Arguments that can be urged for proving that the **white Pepper** is only the **black** deprived of its Bark.

T A B. IV. Fig. 7, 8, 9.

ALL-SPICE, or *Jamaica P E P P E R*.

PIPER Jamaicense; this is called *Piper*, from its Likeness to the **black Pepper**, and is distinguished by the Name of its native Place. However, when we come to describe it Microscopically, a very great Difference will appear between them. The Name **All-spice** is given to it, from its Resemblance, in Flavour, to several of the Aromatics together.

SYNONYMA.

Pimenta, Offic. *Piper Jamaicense quibusdam, odoratum Jamaicense nostratibus, Raii Hist. ii. 1507. Myrtus arborea, foliis laurinis aromatica, sive Pimienta, Sloan. Phil. Transf. Numb. 192. p. 462. Cat. Jamaic. p. 161. Hist. ii. 76. Tab. 171. Raii Dendr. 33. Caryophyllus aromaticus Americanus, lauri acuminatis foliis, fructu*
orbi-

orbiculari, *Pluk. Almag.* 88. *Phytog. civ. Tab.* 155.
Piper Caryophyllatum, *piper Jamaicense*, *Mont. Exot.* 9.
Coculi Indi aromatici, *Mus. Regiæ Societ.*

CHARACTER of Tree and Flower.

The best Description of the Characters of this Tree, being that given by the Honorable Sir *Hans Sloane*, in his History of *Jamaica*, and in the *Philosophical Transactions*, Numb. 192. p. 462. we shall here transcribe it in the Author's Words: *viz.*

This Tree has a Trunk as thick as one's Thigh, rising straight about thirty Feet high, covered with an extremely polite or smooth Skin, of a gray Colour, and branched out on every Hand, having the Ends of its Twigs set with Leaves of several Sizes, the largest being four or five Inches long, and two or three broad in the Middle where broadest; and when it decreases to both Extrems, ending in a Point, smooth, thin, shining, without any Incisures, of a deep green Colour, and standing on an Inch-long Footstalk; when bruised very odorous, and in all things like the Leaves of a Bay-Tree.

The Ends of the Twigs are branched into Bunches of Flowers, each Footstalk sustaining a Flower, made up of four herbaceous, or pale green *Petala*, bowed back or reflected downwards, within which are many *Stamina* of the same Colour.

To these follows a Bunch of crowned or umbillicated Berries (the Crown being made up of four small *Foliola*

or Leaves) which are bigger when ripe than Juniper-berries; at first when small, greenish; but when ripe they are black, smooth, and shining, containing in a moist, green, aromatic and biting Pulp, two large *Acini* or Seeds, separated by a Membrane lying between them, each whereof is a Hemisphere, and both joined make a Globe or spherical (appearingly one) *Acinus*, whence *Clusius* makes it one Seed divisible into two Parts.

It grows on all the hilly parts of the Island of *Jamaica*, but chiefly in the North Side thereof; and wherever these Trees grow, they are generally left standing when other Trees are fell'd, or they are sometimes planted where they never grew, because of the great Profit from the cured Fruit, sent in great Quantities yearly into *Europe*.

It flowers in *June*, *July*, and *August*, but in several Places sooner or later, according to their Situation and different Season for Rains; and after it flowers, the Fruit soon ripens; but 'tis to be observed, that in cleared open Grounds 'tis sooner ripe than in thicker Woods.

There is no great Difficulty in curing or preserving of this Fruit for use. 'Tis for the most part done by the *Negroes*; they climb the Trees, and pull off the Twigs with the unripe green Fruit, and afterwards carefully separate the Fruit from the Twigs, Leaves, and ripe Berries: which done, they expose them to the Sun from its Rising to Setting many Days, spreading 'em thin on Cloths, turning them now and then, and carefully avoiding the Dews, which are there very great. By this Means they become a little wrinkled or rugous, dry, and from a
green

green change to a brown Colour, and then they are fit for the Market, being of different Sizes, but generally of the bigness of black Pepper, something like in Smell and Taste to Cloves, Juniper-Berries, Cinnamon and Pepper, or rather having a peculiar mix'd Smell, somewhat akin to them all, whence the Name of *All-spice*. The ripe Berries are very carefully separated from those to be cured, because their wet and plenteous Pulp renders them unfit for Cure. Whence, these Berries always coming unripe into *Europe*, has been the Occasion of Naturalists thinking it to be *fructu umbilicato sicco*. The more fragrant and smaller they are, they are counted the better.

It is now commonly sold by Druggists for *Carpobalsamum*, which I suppose came from *Hernandez*, who says it may be its *Succedaneum*; but it is not that Fruit, but seems more fragrant, and less astringent and balsamic.

It has been taken by *Clusius* for *Pliny's Caryophyllon*, and by others for *Amomum*; but 'tis not likely that it was known to the Ancients, not being known to grow in the *East*, but *West-Indies*; whence it was brought into *England* and sent to *Clusius*, who first discovered and figured it, giving it this Name, *Amomum quorundam, an Caryophyllon Plinii*, *Exot.* p. 17. from whence came that in *Gerard*, *Amomum quorundam, forte Caryophyllon Plinii*, p. 1610. and that of *Parkinson*, *Amomum aliud quorundam & Caryophyllon Plinii a Clusio suspicatum*, p. 1567. likewise that of *Caryophyllus aromaticus fructu rotundo*, *C. B.* p. 411. and *Amomum quorundam odore Caryophilli*, *J. B. T.* 2. p. 194.

Redi in his *Exper. Nat.* p. 132. speaks of this, and figures it under the Name of *Piper Chiapæ*; and *Dr. Trappam*, in his Discourse of the State of Health in the Island of *Jamaica*, calls it the Bay-Tree, or spicy Pimento, p. 38. and *Dr. Grew*, in his *Museum Regalis Societatis*, calls these, being very large, *Aromatic Indian Berries*, or *Cocculi Indi aromatici*, p. 211.

It is also very likely that *Hernandes* does describe this under the Name of *Xocoxite, seu Piper Tavasci*, p. 30. His Description agreeing in every thing only the Flower, which must, if he rightly describes it, make it different; for he makes it to have a scarlet Flower like the Pomegranate, smelling like Orange-Flowers, no way agreeing to this.

Ximenes, in the *Spanish History of Hernandes* printed at *Mexico*, describes it the same way by the Name of *Xocoxite o Pimiento de Tavasco*, fol. 2. so that I remain in doubt, but am apt to believe it the same, only ill-described by this Author.

I am likewise, on account of an ill Description, very much at a Loss to know whether this be the Tree *Piso* describes in the first Edition of his Book, p. 98. 1648. under the Name of *Anhuibamiri*.

MICROSCOPICAL Description.

The *Jamaica Pepper* (Fig. 7.) is a Seed almost of a globular Form, however not so round as not to discern, in a great many of them, a kind of Division or Bulk on each Side, as if they contained two Bodies within them.
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They are of a brown Colour, as was before taken notice of, and have an apparent granulated, or rough Surface, by the *Microscope*. On the upper Part each Seed has a *Corona* or *Cup* formed of a Substance nearly membranaceous or bulbous, rising up with an Edge considerably high, in proportion to the Size of the Seed; this *Cup* is the *Umbilicus*, being rough and porous at bottom, and having therein one little Process or *Granula* generally larger than the rest. The whole Substance of the *Cortex* is *spongy* and *flaky*, and appears to be lined with a flaky Membrane, much resembling the Substance of *Puff-paste*, and being of a yellowish or Straw-Colour, as that is when not too much baked.

This *Cortex* or Husk (*Fig. 8.*) contains two Grains, which are plano-convex, lying together by their flat Surfaces, but are divided by a *Septum*, formed of a thin uniform Membrane, of the same Colour with that which lines the Covering. Each of these blackish Grains (*Fig. 9.*) has pretty much the Resemblance of a little *Species* of the Water-Snail, has also a kind of spiral Turn upon the *convex* Side, and an Appearance corresponding something with that Form on the other Side. The Covering of these is very rugous, shining, and looks blackish or variegated in many Places, with brown and a dark Olive, and contains a *Parenchyma* that is black and porous. Each Seed has a kind of Notch on one side, which is the *Umbilicus*, and which, in each, lie so together, as to answer exactly to the *Cup* or *Umbilicus* of the outward Husk or Bark; a most wise Contrivance

U

vance of the great Creator, that there might be no Impediment in the Progress of the Rudiments of the Tree, thro' both *Umbilici*; but that they should so exactly correspond as to have a free Passage granted to the first Shoots of the *Embryo-Tree* through both, by the same Protrusion; which could not be the Case if the *Umbilicus* of the Grains answer'd to a substantial Part of the Husk; for then, the Rudiments being extreamly tender, after having pass'd through their first *Umbilicus*, would meet an Opposition against the Sides of the Husk, and be confined in a State of Pressure so long, before they could be relieved by the Decay of the Husk, that Nature's Progress and Intent would be perverted both in the Form and Accretion of the Tree: This may be considered to be the Case in every Seed that grows. Every one is pretty well acquainted with the general Taste and Smell of *All-spice*, and therefore not much is required to be said upon it; one thing however is particular and worth mentioning, which is, that the Bark or Husk has a fine aromatic Pungency in the Taste, whereas the Grains chew'd separately, have more Roughness and Austerity, without that fine quick Pungency so remarkable in the Cortex. Hence one would almost believe that the *Grains* of the *All-spice* are as powerful as well as warm Restrictant. The natural Length and Breadth of a middling whole Grain of this *aromatic Spice* is about a fourth of an Inch.

V I R T U E S.

The use of this Spice in the Kitchen is already well known, being made a *Succedaneum* to others here, as well as in the Shops, from its partaking of the Flavour of so many others of Note. It is not met in any *Dispensatory*, either ancient or modern, except in a late Edition of that of the Royal College of Physicians; and it is now said to have obtained a favourable Opinion among Shops, in being substituted for other Spices which are more dear; and that some have found the Way of using this alone in making the *Aqua Mirabilis*, though there is none of it order'd in the *Recipe* for making that Water; and that if it be carefully distilled, and the Spirit good, it is hardly to be perceived from that which is genuine; and, says *Quincy*, may perhaps not be inferior in its medicinal Virtues.

It has been esteemed a Strengthenener of the Heart and Stomach, an Aperitive, and a Discusser of Flatulencies, and said to be good in cold Diseases and Colics. We shall finish our Account with what Sir *Hans Sloane* says of it as above cited, touching its medicinal Virtues.

This Fruit, says he, with Water distilled (*per vesicam*) yields a very odoriferous chymical Oil, sinking to the Bottom of Water like Oyl of Cloves. It may deservedly be counted the best and most temperate, mild, and innocent of common Spices, and fit to come into greater use, and to gain more Ground than yet it hath, of the *East-India* Commodities of this kind, almost all of which

it surpasses, by promoting the Digestion of Meat, attenuating tough Humors, moderately heating and strengthening the Stomach, expelling Wind, doing those friendly Offices for the Bowels we generally expect from Spices. *Clusius* says, that it takes away, if chew'd, a strong Breath. *John de Barrios* tells us, 'tis one of the Ingredients of Chocolate in *New Spain*; and *Franciscus Uria*, who brought it from *New Spain* and gave it to *Redi*, said, it was there commended against the *Epilepsy* and *Gutta serena*, which he in divers Persons tryed, but without Success; but he at the same time says, he thinks it a good stomachic and cephalic Medicine, moderately given, *Exper. Nat.* p. 132.

T A B. IV. Fig. 10, 11.

C U B E B S.

THIS is an *Arabian* Name, called by their Physicians, *Cubebe*, and *Quabeb*; by the common People *Quabebeckini*; but in *Java*, where they grow in plenty, *Cumuc*; by the other *Indians*, except in *Malayo*, they are called *Cubab Sini*, which Name is not given to the Tree or Fruit, as if it grew in *China*, for the Fruit is carry'd to *China* from *Sunda* and *Java*, where it chiefly is; but because the Traders of *China*, who sail the *Indian Ocean*, carry them to other Ports from these Places mentioned, and call them *Cumuc*; which by corrupting the

the Word, they call *Cubab Sini*, because the *Chinese* sell it to them. We are indebted to *Clusius's* Translation of *Garcias* for the Account we give of these Berries.

SYNONYMA.

Cubebæ, *Offic. Ger.* 1365. *Emac.* 1548. *Park. Theat.* 1583. *J. B. i.* 350. *Mont. Exot.* 9. *Ind. Med.* XLIII. *Raii Hist.* ii. 1813. *Cubebe vulgares*, *C. B. Pin.* 412. *An Pindaiba nonnullis Ibira?* *Pis.* 144. *Arbor baccifera Brasiliensis*, fructu *piper* recipiente, *Raii Hist.* ii. 1593. *Arbor Bisnagarica*, myrti amplioribus foliis, per siccitatem nigris, *Cubebæ* sapore, *Pluk. Almag.* 43. *Phytog. Tab.* 140.

CHARACTER of Plant and Flower.

The *Cubeb* Plant has Leaves like the *Pepper*, but a little narrower, not like the *Myrtle* in Leaves or any other Respect, as has been said, but creeping among Trees like *Ivy* or the *Pepper*. The Fruit grows in Bunches, not like *Grapes*, but every Grain has its proper Pedicle; it is a wild Plant and not cultivated, nor are there many kinds of it, as the Monks who commented upon *Mesue* have asserted. This Fruit is held in so great Esteem where it grows, that the Inhabitants boil the Grains before they suffer them to pass out of their Country, in order to prevent their Propagation elsewhere; which is not unlikely, because they are very subject to decay, as well in the *East-Indies* as here in *Europe*, after they are exposed to Sale. This has been thought a kind of *Pepper*, the
Fruit

Fruit of the *Ruscus*, and the *Carpesium* of *Galen*; and *Cesalpine* affirms them to be the true *Amomum*; but *Garcias* rejects all these Opinions as false, as well as that of their being the Seed of the *Vitex*, affirming, that they differ from all these in every Respect. *Schroder* thinks it to be a Tree, which produces the *Cubebs* like the common Apple-Tree, having Leaves like the *Pepper-Plant*, but something narrower; and the Character, which *Frederick Hoffman* gives of it, is, that the Plant is wild, being slender and weak like *Ivy* or *Smilax*, clinging and depending upon other Trees for their Support; the Leaves like those of the *Myrtle*, the Flowers fragrant, the Fruit in Bunches, not like *Grapes*, but each Grain having its proper Pedicle. This Description agrees with that of a Bunch of Currants, which is the general Character given to this Fruit, by such Authors as seem to know most of the Matter, as to its manner of growing; and as to Excellency and the Esteem had of it by the Natives, most agree, that they endeavour, as much as may be, to render it incapable of growing in any other Parts of the World.

MICROSCOPICAL Description.

The *Cubeb* (*Fig. 10.*) is a round rugous Grain, which we shall consider as having a *Basis* and *Apex*; the *Basis* is that Part which adheres to the *Pedicle*, and the *Apex* the opposite Part, whereon there appears a little prominent Point, which seems as if several of the *Rugæ* or Veins met together to form the *Umbilicus* of the Grain.

The

The *Pedicle* is about as long as the Diameter of the Grain, sometimes longer, is thicker where it adheres to it, and on the thick Part the *Veins* begin longitudinally, and run up, in most beautiful Ramifications, upon the Body of the Grain, inosculating and dividing all over the Surface in a most agreeable manner. These *Veins*, or *Rugæ*, are something like those of the black Pepper, but less clumsy, and very much resemble the Ramifications of a Blood-Vessel on the Backs of some meagre Persons Hands, who have them high and conspicuous. The little prominent Point mentioned before, which is the *Umbilicus*, seems to be divided into three *Lobes* or Buttons, in the Middle of which is the Passage of the *Umbilicus*; and in breaking off the *Pedicle* or Stem, the *rugous* Cortex seems hollow a good way in towards the inner Shell. The Surface and *Veins* are rough and porous, and of a dusky brown Colour, much like that of the black Pepper.

The *Cubebs* upon cutting them (*Fig. 11.*) appear hollow, altho' not quite empty. I have cut a vast Number of the Grains, and never yet found a perfect *Nucleus* to fill the Cavity; yet there is always something resembling a shriveled Prune, and of the same black Colour, adhering sometimes to one Side, sometimes to another; whence once would be apt to think the People gather them before they are quite ripe, and that the *Nucleus*, which probably, if ripe, would fill the Husk, withers or shrivels into the Form I find them, altho' the Husk remains hard and globular. What confirms me in this Opinion.

Opinion is, that in some they are larger and seemingly more mature than in others ; whereas, if they were all alike, one might have Reason to conjecture, that they were gathered in a State of Maturity.

The external Substance of the Husk, is, quite thro', of the same Colour and Consistence with the outer Surface, till it reaches the inner Shell ; this is a yellowish Shell, more uniform and compact than the former, and has the Vestiges of the *Umbilicus* and Stem apparent on the inner Surface, which seem more porous than the other Parts of this Surface. Some of these imperfect *Nuclei*, which are the largest when divided, have withinside their black Substance, something of a whitish *Parenchyma*. The Taste of the **Cubebs** is aromatic and bitterish, the Smell pleasant, and they are generally less in Size than the black **Pepper**.

V I R T U E S.

These Seeds are very warm, and are supposed to strengthen the Memory, by being of Service to the nervous System. The *Indians* make great use of them for warming the Stomach, and to excite Venery steep'd in Wine : This last Opinion has gained Credit among some of our most celebrated Writers, insomuch that *Fred. Hoffman* (besides allowing it to have an attenuating, dissolving, and warming Quality) has these Words : *Item in ore detentus fructus claram vocem concionatoribus facit, Venerisque auget voluptatem si in coitu ore detineatur ; utero etiam confert, & flatus sylvestres discutit.*

T A B.

T A B. IV. Fig. 12, 13.

Guiney P E P P E R.

THIS may have been called so from its growing in that Country, as it is called by the general Names of *Brazil Pepper*, *India Pepper*, *Barbary Pepper*, &c. perhaps for the same Reason. But the Name *Capficum*, seems to have been given it from the *Greek Word* κάψα, *Cista*, *Theca*, a Case, because the Seeds are contained in a Case, or Pod; or from κάπτω, *avide comedo*, to eat or devour greedily, which also sometimes signifies to bite, because the Pod is exceeding hot and biting on the Tongue.

SYNONYMA.

Capficum, *piper Indicum*, *Offic.* *Capficum vulgare*, *Elem. Bot.* 127. *Capficum filiquis longis propendentibus*, *Rupp. flor. Jen.* 37. *Tourn. Inst.* 152. *Boerb. Ind. A.* ii. 68. *Capficum longioribus filiquis*, *Ger.* 292. *Emac.* 364. *Capficum majus vulgatius oblongis filiquis*, *Park. Theat.* 335. *Piper Indicum vulgatissimum*, *C. B. Pin.* 102. *Raii Hist.* i. 676. *Piper*, *Capficum*, *Chab.* 297. *Piper Calecuticum*, five *Capficum oblongius*, *J. B.* ii. 943. *Solanum Capficum dictum vulgatissimum*, *Hort. Lugd. Bat.* 574. *Solanum urens*, *Capficum dictum*, five *Piper Indicum vulgatissimum*, *Hist. Oxon.* iii. 528. *Piper Indicum filiqua flava vel aurea*, *Comm. Flor. Mal.*

215. Capo Molago, *Hort. Mal.* ii. 109. Quiya, five piper Brasiliense, *Pis.* 225. Quiya Brasiliensibus, *Marcg.* 39. Lada Chili, *Bont.* 131. Chilli, Piper filiquosum Mexicanum, *Hern.* 135. Capsicum Actuarii, five carignum zinziber; Avicennæ calecuticum piper, five piper Indicum longioribus filiquis, *Lob. Icon.* 316.

CHARACTER of Plant and Flower.

Tournefort's Character of the Flower of this Plant has something particular in it that other Descriptions have not: He says, **Guiney Pepper** bears a Flower of one single Leaf, shaped like a Wheel, and divided into several Segments, out of whose Flower-cup the Pointal arises, fastened like a Nail in the Middle of the Flower, which afterwards turns to a soft Fruit of a membranous Nature, divided into two or more Seed-channels, and full of flat Seeds like Kidneys.

The Difference will appear, when we speak of the Flower, from others, amongst our Botanists, whose Diligence and Observation are not in the least inferior to those of that Author. “ *Capsicum* brings forth a single
“ Stalk, a Foot or a Cubit long (in warmer Regions a
“ Cubit and half, or two Cubits long) cornered, taper,
“ rough, firm, of a dark green Colour, and red only
“ in that Part where the Leaves come forth; but the
“ Leaves grow out of the half Joints, broader than those
“ of *Lake-weed*, pointed, of a dark green, or of a green-
“ ish yellow Colour, pretty thick and smooth, the Nerve
“ running lengthways, from whence oblique Veins run
“ to

“ to the Edges, hanging on a Foot-stalk one or two
 “ Inches long, and equal round the Edges. From their
 “ Wings little Twigs shoot forth adorned with such
 “ Leaves.

“ The Flowers arise out of the Wings of the
 “ Leaves, and at the Roots of the Ramifications, and
 “ rest upon a long hollow Foot-stalk, of a full deep red,
 “ bending downwards, white, and larger than the Flowers
 “ of common Night-shade, but otherways exactly like
 “ them; naturally five-leaved, but sometimes fix-leav-
 “ ed, either thro’ Culture or the Luxuriancy of the Soil,
 “ with pointed Leaves expanded like a Star, with a
 “ few violet (or according to *Parkinson*) yellow Threads
 “ in the Middle, and a little green Cup ending in feve-
 “ ral sharp Points, embracing the whole Flower be-
 “ low.

Gerard's Description will not be improper here, who
 says, the *Capsicum longioribus siliquis*, has square Stalks a
 Foot high, or something more, set with many thick and
 flat Leaves, not unlike to those of Garden Night-shade,
 but narrower and sharper-pointed, of a dark green Co-
 lour. The Flowers grow along the Stalks, out of the
 Wings of the Leaves, of a white Colour, having for the
 most part five small Leaves blazing out like a Star, with
 a green Button in the Middle. After these grow the
 Cods, at first green, and when ripe of a Colour glitter-
 ing like red Coral, which contain the Seeds, &c.

Tournefort has twenty-six Species of this Plant, from
 different Authors, to whose *Institutions* I refer the Reader;

and *Miller* recounts the following eighteen, which are sown in many curious Gardens, with other annual Plants, in Hot-Beds, and require to be treated after the same Manner as he directs for the Cultivation of the *Amaranthus*. See that Author's *Dictionary* for further Directions. These Species are:

1. *CAPSICUM siliquis longis propendentibus*, *Tourn.* *Capsicum* with long hanging Pods: This is what we here describe.
2. *Siliquis recurvis*, *Dod.* With long Pods, which turn up at the Ends.
3. *Latifolium, mali Æthiopici fructu magno, compresso, striato, Americanum*, *Pluk.* With long compressed striated Pods, commonly called **Bonnet Pepper**.
4. *Africanum, fructu pyramidali, pendulo, rugosissimo*: African, with pyramidal rough hanging Pods.
5. *Africanum, fructu pyramidali, rugosissimo, plerumque erecto*: African, with pyramidal rough Pods, for the most part growing erect.
6. *Fructu non acri rugoso, longo, pendente, rubro Teschilli*, *Hern.* With long hanging red Pods, which are not hot.
7. *Fructu cordiformi, plerumque nutante, rubro*; with Heart-shaped red Pods, for the most part hanging downwards.
8. *Fructu pyramidato crasso, plerumque erecto, rubro*: With pyramidal thick red Pods, for the most part growing upright.

9. *Fructu oblongo, nunc erecto, nunc nutante, rubro*:
With oblong red Pods, sometimes erect, sometimes hanging.
10. *Fructu rotundo majore, nunc erecto, nunc nutante, rubro*: With large red round Pods, sometimes erect, sometimes hanging.
11. *Fructu flavo pyramidato, oblongo, nunc erecto, nunc nutante*: With oblong pyramidal yellow Pods, sometimes erect, and sometimes hanging.
12. *Fructu cordiformi, nunc erecto, nunc nutante, flavo*:
With Heart-shaped yellow Fruit, sometimes erect, and sometimes hanging.
13. *Fructu olivario erecto*: Shaped like an Olive, and upright.
14. *Fructu parvo pyramidali erecto, rubro, Sloan.*
With small red Pods growing erect, called by the Inhabitants of the *West-Indies*, **Barbary Pepper**.
15. *Fructu parvo rotundo acerrimo, Sloan.* With small round Pods which are very hot, called by the Inhabitants of the *West-Indies*, **Bird Pepper**.
16. *Americanum, fructu rotundo cerasorum forma, Pluk.*
American, with round Cherry-shaped Fruit.
17. *Americanum latifolium, fructu oblongo, erecto, candido*: American, with broad Leaves, and oblong white Pods, erect.
18. *Fructu maximo oblongo, rugoso, plerumque nutante, rubro*: With large oblong, red, rough Pods, for the most part hanging downwards.

The Differences between these several kinds chiefly consist in the Shape and Colour of their Pods; and the first Accounts that appear to be transmitted to Posterity of the Variety of these Fruits, are those written in *Italian* by the ingenious Father *Gregory de Regio*, a Capuchin Frier, and sent to *Clusius* in the Year 1607, from a Convent where he lived at *Bononia*. This Frier had drawn with each sort of Pod, its Branch and Leaves, which *Clusius* confesses he had neglected to have engraved; confining himself barely to the Figures of the Pods alone; because, says he, the Leaves differ'd from each other only in their being broader or narrower, and because the Expence should not be enlarged, and also that the Manner of Growth and Ramification of every kind agree. He exhibited thirteen Figures, which he divided into three Sections or Classes; the first contained four kinds of *Siliquæ* with their Fruit erect; viz. the great Round erect **Guiney Pepper**, the great pyramidal Oblong; the lesser erect Pyramidal, and the slender erect Pyramidal. The second Class contained four kinds, with their *Siliquæ* propendent or hanging down, viz. the Heart-shaped **Guiney Pepper**, that shaped like an Olive, that of a small round Cherry-form, and the broad rugous Pod. The third Class were also propendent, being the Oblong **Pepper** with the Points turning upwards, the lesser Oblong with the Points turning upwards, the bifurcated Pod, (this Property does not appear by his Figure) and the yellowish podded **Pepper**. These two latter are pyramided, and nearly as big as his eighth kind, which
is

is the last of his second Class, only one is a little blunter than the other. All these, with their particular Descriptions, are published by *Clusius* in his *Curæ Posteriores*, from whence *Johnson* has taken his Account, and all the Figures exhibited either by *De Regio* or *Clusius*. This I thought proper to mention, that they who cannot procure the Works of *Clusius*, may have recourse to *Johnson's Gerard*.

The common long-podded **Guiney Pepper** was the thirteenth kind, which *Clusius* has done ; with this he has exhibited the Branches and Leaves, and this is the first kind of *Johnson* ; besides which he has copy'd, from *Clusius*, the Branches, Leaves, and Pods of the small-podded **Guiney Pepper**. The Original of this is in his Notes upon *Monardus's* 54th Chapter of simple Medicines, where he gives it this Character : “ I saw, says he, “ another kind of *Capsicum* in several Places of *Portugal*, with green Branches, and Leaves like the *Solanum hortense*, but a little narrower, having a Flower also like that Plant, and a small Fruit standing upon long Pedicles ; at first green, then turning black, and becoming at last red with their Maturity, containing several broad flat Seeds in the manner of the other kinds of the *Capsicum*, so excessively hot in Taste as to burn one's Mouth for several Days. It flowers and brings Fruit all Autumn, and in warm Climes also in Winter. They call it among the the *Portuguese*, *Piementa de Bresil*, in which Place, it is said, it grows in plenty, “ and

“and is much in use.” The *Capsicum* is said to be a Native of *America* originally.

MICROSCOPICAL Description.

The common long-podded *Capsicum* is what we describe here, being sufficient for every other kind ; because of whatsoever Form the Pods may be, the Seeds are all alike ; we shall therefore only make a short Description of the Pod, with some little Remarks upon *Tournefort's* Figure of the *Capsula*, and proceed to describe the Seed. The Pod is Pyramidal, but in an irregular manner, and when ripe, of a deep coral-red Colour, and finely polished. The *Apex* of this kind is a little blunt, and a Vestige of the Divisions of the Cells, within, may be discerned on the outer Surface of the Pod. The thick End, or Basis of the Pod, is embraced by a green *Calix* arising from the Stalk, which is indented round and in close Contact with the Pod. The Stalk is small and slender, at some Distance from the Pod ; but as it approaches nearer to it, grows thicker, and ends like the wide Extremity of a Trumpet in the *Calix*.

There are two or three membranous Divisions within the Pod, in a longitudinal Direction, to the Sides of which, the Seeds stick edgeways one upon another like pieces of Money, as at *Fig. 12*. The Pod or Husk is very thin, notwithstanding *Tournefort* has drawn a transverse Section of one with the Substance thick and pulpy, whereas they are actually as thin as a Wafer. The Surface of the Pod is depressed in different Places,
the

the nearer it approaches to a thorough Ripeness, and yields easily to the Pressure of one's Finger, being so very thin.

The Seeds are flat, of a yellowish Colour; and as to their Form, they rather are like the capital C (*Fig. 13.*) in their Outline, than of a Reni-form, as some Authors have it. The Surface is porous, and within the Outline there is a regular Depression, which makes the Edge of the Seed look plump and full all round the circular Back.

There are other little Risings or Eminences upon the Surface on both Sides, especially one near the fore Edge, which is pretty full; and the strait Edge or Belly of the Seed has a considerable Fissure (*a*) with *Labia*; in most, as conspicuous with a small *Magnifier*, as the Figure; in some, a little less. This is the *Umbilicus* of the Seed, and in general is very like the *Pudenda muliebria*. They are pretty nearly of a Size, and are about one seventh of an Inch long, and about the same Breadth. Their Taste will appear when we speak of their Virtues. We must not omit however to remark, that the Covering of the Seed is an extream thin Membrane, and contains a *Parenchyma* of the same yellow Colour.

V I R T U E S.

As all these Species of the *Guiney Pepper* are alike in their Qualities, there is no need of particularising either in the following Account; we shall therefore speak of them in general.

Y

Father

Father *Gregory*, whom we have mentioned before, is so accurate in his excellent Observations on these several kinds of the *Capficum*, that it is easy to conclude he had spent a considerable Time, and made several Experiments, to be able to say what he has deliver'd concerning them. We cannot therefore do better in this Place, than to translate what he says of the Manner of *preparing* and using them: “ Altho’ the Acrimony and Sharpness of
 “ this Plant deterr’d Mankind from the use of it for a
 “ long time, yet at length their Ingenuity and Industry
 “ found means to correct and prepare it, so as to render
 “ it of service both in Diet and Medicine, without
 “ the least Inconvenience, in the following Manner :
 “ Gather the ripest of the Pods with their Pedicles, and
 “ dry them gradually in the Shade ; then put them into a
 “ Pan with some Flower, and dry them over a slow Fire ;
 “ afterwards cleanse them of the Flower and Stalks, and
 “ clip them Seeds and all, with a Scissars, very small, and
 “ to every Ounce add a Pound of Flower ; let it be fer-
 “ mented and baked like Bread ; then cut them in Slices
 “ and bake them a second time, till they become per-
 “ fectly hard as Biscuits, and so reduce them to a Pow-
 “ der in a Mortar, and sift them through a fine Sieve.

This Author proclaims the Excellence of this Powder in many Respects ; says, it is excellent for seasoning all kinds of Victuals, creates an Appetite, helps Digestion, discusses Flatulencies, and therefore should be eaten with all kinds of cold Food ; discharges viscous Humours from the Stomach, promotes Urine, and helps the Sight. This
 Powder

Powder mix'd with pectoral Lohocs, Electuaries, or the like, cures old Coughs; with Honey, by way of Cataplasm, is good for Sciatical Pains; and apply'd to the Throat, discusses Tumours of the Tonfils; mixed with Pitch, and apply'd, takes away scrophulous Tumours, and with Nitre cures all Freckles or Morpew; mix'd with Hen's Grease, it dissolves hard schirrous Tumours and Carbuncles; the Ashes of the Husks cleanse the Teeth and render them white. In short, he makes this Powder, by being mixed with other Things of any Intention, answer all Ends, even to ease Pains of the Gout, mixed with liquid Turpentine or Tar. Most Authors, who have undertaken to give an Account of any particular favourite Subject, are generally so fond of setting it off, that the Imagination often gets upon the Wing, and Virtues are ascribed in greater Numbers than can be afforded by the Medicine. However, it must be allow'd that the Manner of preparing this Powder, effectually corrects the dangerous Mordacity of the Pod, which is excessive, so as to produce violent Symptoms when unadvisably eaten in too great a Quantity, or upon opening the dry Pod, if even the Dust arising from it gets into the Nose or Eyes. This Author complains of his having experienced it, upon taking the Seeds out of the Pod; and *Clusius* owns the like had happened to him, that the Vapours were so sharp as to cause his Eyes to run with Water, and excite such an Inflammation, as to make him fear the Loss of his Sight.

This Powder is a good *Succedaneum* where Pepper is not plenty, to be used in Diet, and where Flatulencies are to be dissolved, or if the Stomach wants warming, it may be of Service; nor do I doubt, but among Pectorals, it may be efficacious as an Attenuater and Promoter of Expectoration. Yet we have many things of the same Intentions, that do not require so much Preparation, and are consequently more convenient; such as **Mustard-Seed**, **Ginger**, the several **Peppers**, and the **Cardamoms**.

The Pods gathered green and tender, are esteemed a fine Pickle; and the Inhabitants of the *West-Indies* have, by Custom, brought themselves to be able to eat them crude in large Quantities, without producing the ill Effects that would happen upon their being first eaten; which are an extraordinary and intolerable Burning and Pain of the Mouth and Throat.

The **Bird Pepper**, or *Capsicum fructu parvo rotundo*, of Sir *Hans Sloane*, is what they make their *Pepper-Pots* of, by reducing it to Powder with other Ingredients, and using it in *Sauces*, commonly called *Cayan Butter*, in great Esteem among People of high Taste in Cookery; whether this be prepared in the Manner of that of Father *Gregory*, or has taken its Rise from it, I cannot say.

T A B. IV. Fig. 14, 15.

Long P E P P E R.

S E E Black Pepper for the Etymology of the Word Pepper. This kind is called Long, from the Shape of its Fruit, which shall be described hereafter.

SYNONYMA.

Piper longum, *Offic. Ger.* 1355. *Emac.* 1539. *Park. Theat.* 1604. *Ogilb. Chin.* i. 226. *J. B.* ii. 185. *Raii Hist.* ii. 1343. Piper longum orientale, *C. B. Pin.* 412. *C. Comm. Flor. Mal.* 215. *Hist. Oxon.* iii. 602. Piper longum pistolochiæ foliis absque pediculis, Maderaspatanum, *Pluk. Almag.* 297. Piperi longo similis, pistolochiæ foliis, absque pediculis, Maderaspatana, *Pluk. Pbytog. Tab.* 104. Pimpilim, *Pis. Mant. A.* 182. Tlatlancuaye, five piperis longi species ii. *Hern.* 126. Catta-tripali, *Hort. Mal.* vii. 27. *Tab.* 14. Arbor piperifera fructu longo, *Jons. Dendr.* 178. Acapatli, *Laet.* 231.

CHARACTER of Plant and Flower.

Dale's Character is, "Notæ, Planta est sarmentosa.
"foliis latis subrotundis, acuminatis, ad singulos nodos sin-
"gulis alternatim positis, flosculis monopetalis, quinque-
"partitis fructu longo aggregato.

Garcias

Garcias ab Horto says, the Plant which produces the long Pepper differs greatly from that of the black; but in this, he is contradicted by *Clusius*, in the first Book of his *Exotics*, Chap. XX. who affirms, “ that Dr. *Lambertus Hortensius* at his Return from *Java*, in the Year 1601, gave him a Branch with the Leaves and Fruit on it, which differ’d not much from that of the black Pepper as to the Leaves, only being a little slenderer and of a more diluted green; and having shorter Pedicles, and a few more Nerves on the Leaf; that five or six of those Nerves arise on each side, from the middle Rib, which run up from the Stem longitudinally, and sometimes more, according to the Amplitude of the Leaf, yet a little less conspicuous than in the black, but having several oblique little Veins running cross the Leaf. And altho’ the Branch was pretty dry, being preserved between Papers, yet, they had a considerable Acrimony in their Taste.

“ The Fruit, which is formed like the *Juli* or *Catkins* of some Trees, arises at every Joint or Internode of the Branch, and not out of the *Alæ* of the Leaves; but as the Bunch of the *black Pepper* supplies the Place of a Leaf alternately, all the Way up to the Top of the Branch, so do the Fruit of the long Pepper. Some are large towards the lower or thicker part of the Branch, but toward the Top they are gradually less till they are very small, as if just budding out. Another Difference between this Plant and that of the *black Pepper*, is, that the Joints are

“ at

“ at less Distances in this.” He says, he never saw the Boughs of this Tree, but that he has taken his Figure from the most perfect Branch of all those he saw, that were brought over at the same time by his Friend, who bestowed him the *Specimen*.

It is said by others to be of a woody Substance, dispersing here and there its clasping Tendrils, wherewith it takes hold of other Trees that grow near it; (in this it agrees with the Plant bearing the black Pepper.) The Branches are many and full of Twigs, on which the Fruit grows, green at first, and afterwards turns black.

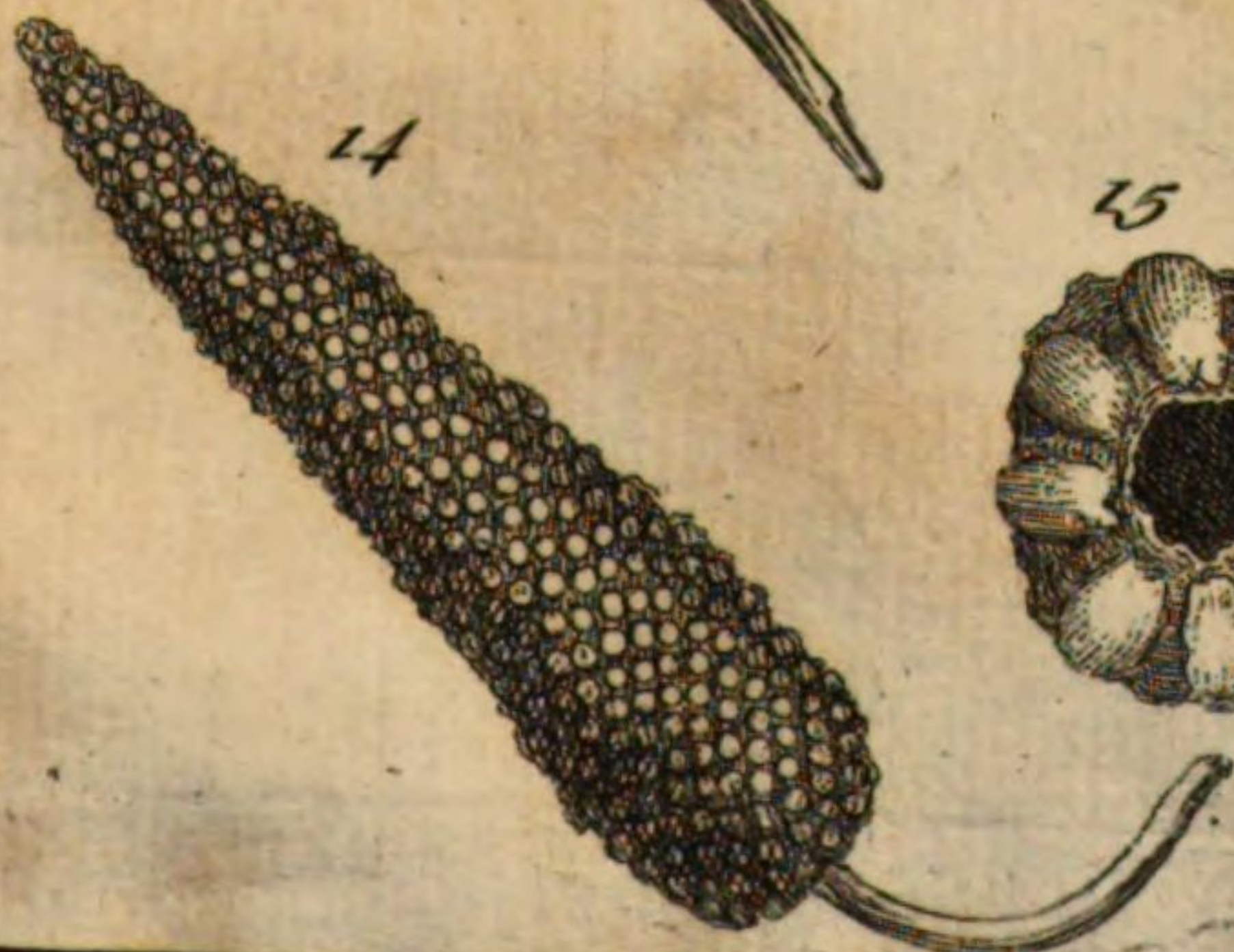
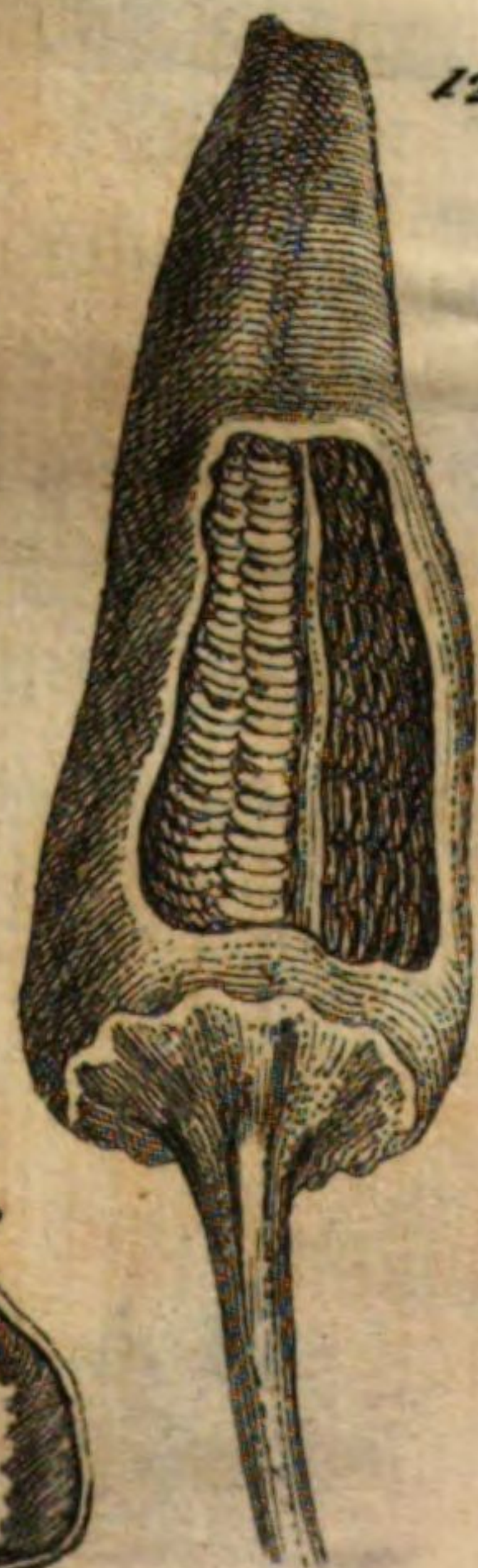
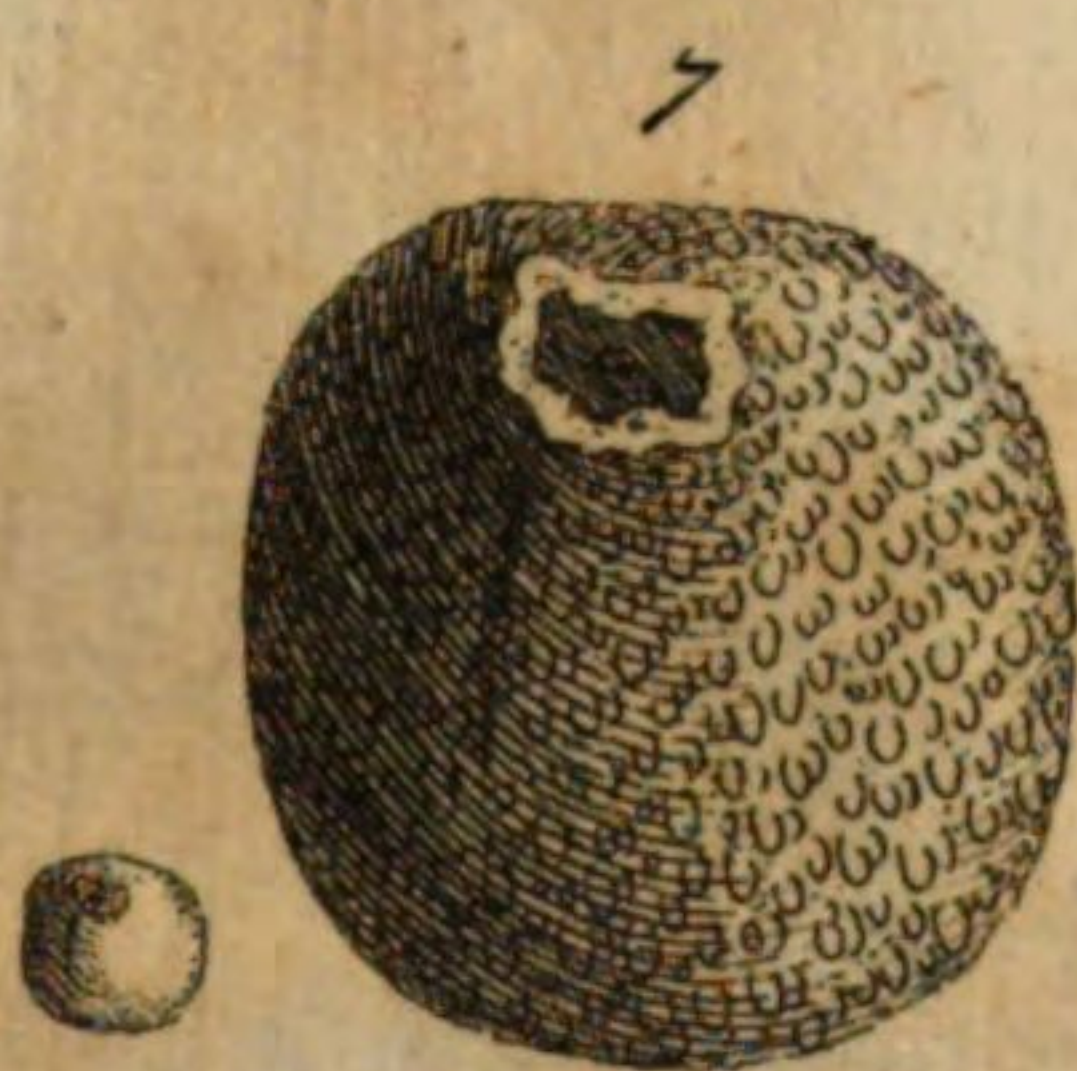
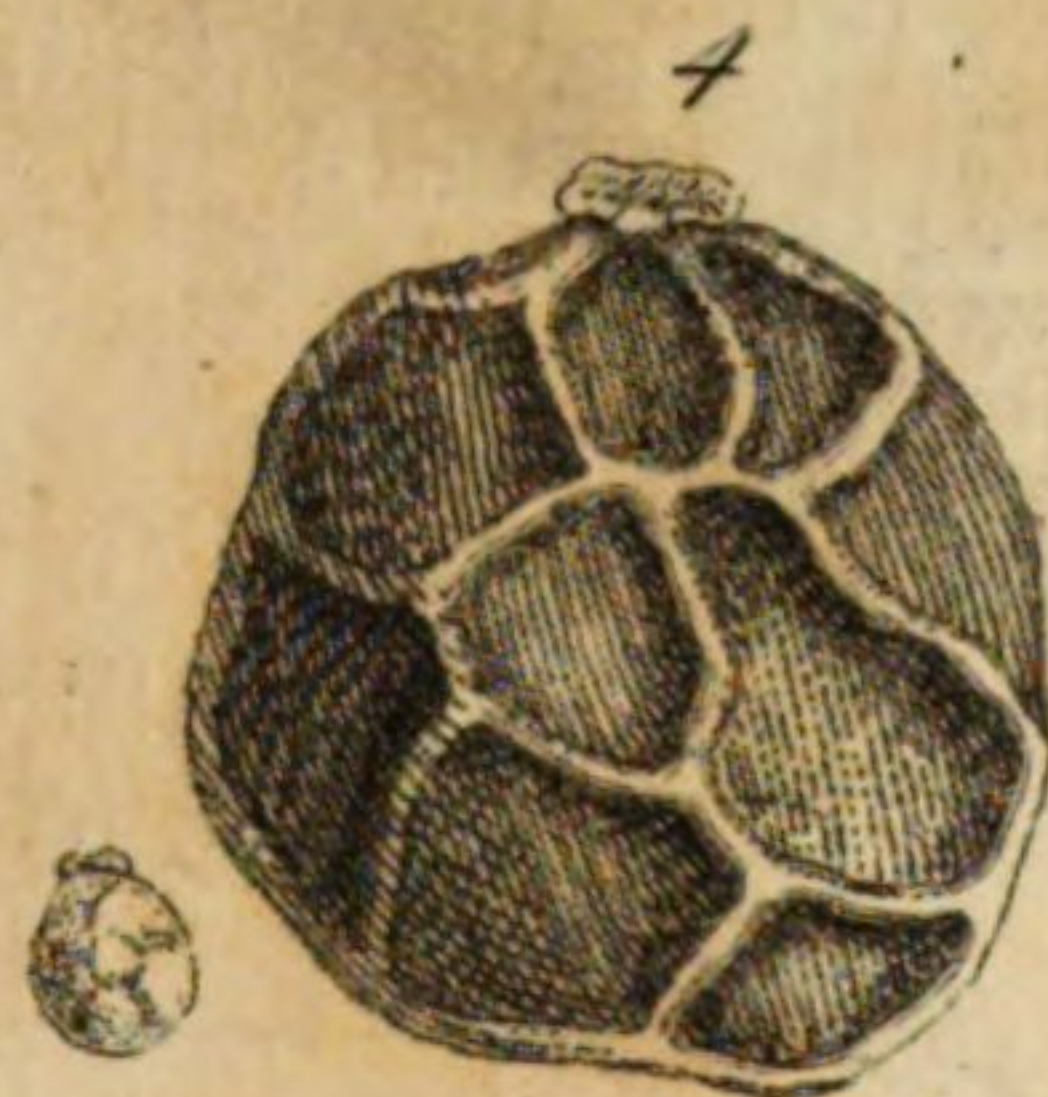
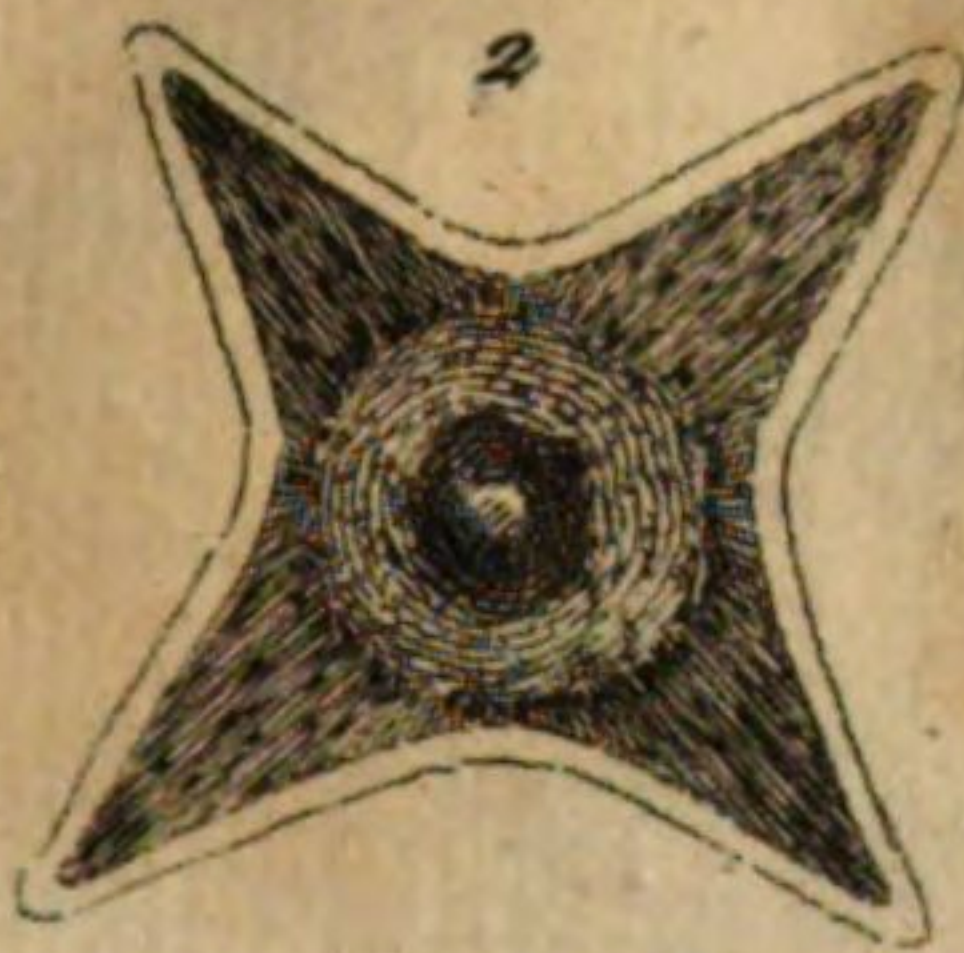
MICROSCOPICAL Description.

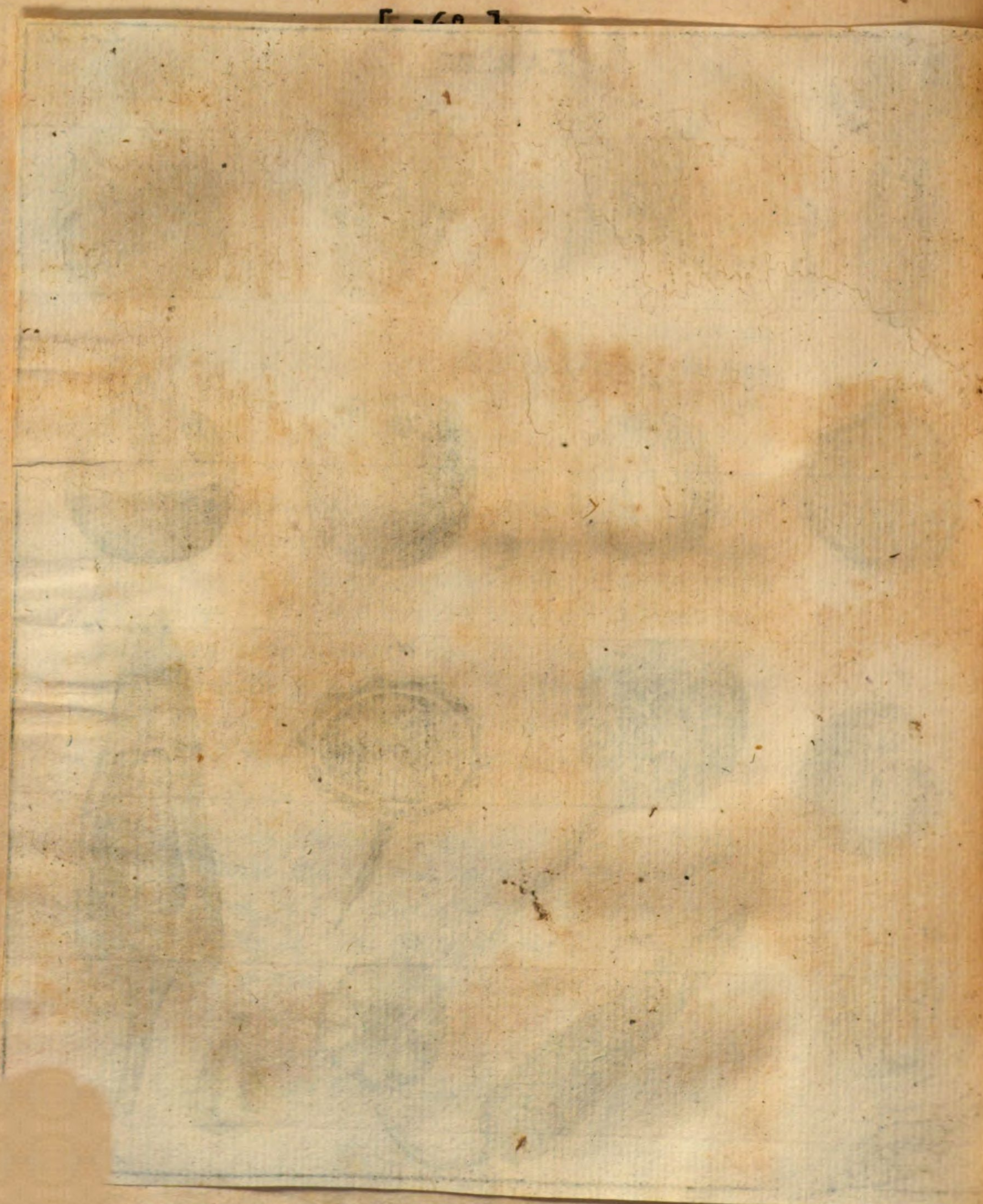
This kind of Pepper is an oblong Fruit, thicker at the *Base*, and running smaller upwards till it ends in a blunt *Apex*; they are of different Sizes, from an Inch long to about three, and as thick in proportion to their Length as the little Finger of a Woman; this is the Proportion of the largest, and where they are but an Inch long, they are not thicker in proportion than the Finger of an Infant. This Difference is carry'd on in the Degree of Accretion, and the Grains that constitute the Fruit are smaller or larger in proportion to its Size; so that if the Fruit be very little, the Grains are hardly discernable; if great, they are large and conspicuous.

As to the constituent Parts of the Fruit; it is said by *Monardus*, to consist of many Grains growing upon a slender Foot-stalk like the Seeds of Plantain, which when taken off, the Stalk remains bare; that the Fruit
is

is sometimes half a Foot long, and as thick as a middling Rope. I confess I never saw any so large ; but it is no unjust Simile to liken the Fruit to that bearing the Seeds of the *Plantane* : And as to the Stem's remaining after the black Grains are off, those which I have cut, in various Sections, appear to be hollow within, and therefore the Grains can scarce be said to be always supported by a Pedicle in the Center of them. Wherefore we are inclined to describe the Fruit as follows : It is an oblong Fruit (*Fig. 14.*) composed of black Grains sticking together (in Ranks obliquely directed towards the Top) in a *Cement*, as Pebbles or Bricks are stuck in Mortar. This appears plainly by *Fig. 15*, wherein the Hollow in the Center appears, with the globular Grains, in the Order they stand in a transverse Section, enlarged by the Microscope. We must however make one Remark here concerning what *Monardus* says, that they are first green, and afterwards grow black by the Heat of the Sun : Now perhaps he had examin'd the Fruit while it was recent, and formed either a Continuation of the Pedicle quite through the Center, or some kind of medullar Substance ; which, through length of Time, may perhaps decay and leave the *Cement*, in which the Grains are stuck, hollow, as I find them in those under my present Inspection ; for in some of the smaller Fruits, a slender Fibre seems to remain ; whereas the larger, as I have said before, are all hollow.

Upon separating the Grains from their *Cement*, they appear to have a black Surface like Shagreen, by the help of
the





the Microscope; are oval in Shape (*Fig. 15.*) having an *Umbilicus* at the smaller End, consisting of a spongy or membranous Spot like that of an Apple; and, at the thicker End, a little pyramidal Process, as if a Stem had been broken off from it. Each Grain appears to be a perfect Seed: and by making a longitudinal Section thro' the Middle (*Fig. 16.*) the Cortex or Covering appears thin, and contains a *Parenchyma*, which, from the outer Edge inward, is blackish and shining, and seems like a *Resin*; in the Center of which is a long Heap of a *milk-white Substance*, that has a saline Aspect, like that of the Grains of Paradise. I tasted the Grains and *Cement* separately, and find both very pungent and hot, but the *Cement* is the hotter of the two; the Grains are about the Bigness of the *Maw-Seed*s, or a little bigger than the *white Poppy Seed*s. Between the *Cortex* and the *Parenchyma*, at the larger End, there is a Rhomboidal Hollow.

V I R T U E S.

The Virtues of this long Pepper agree with those of the black, in Medicine and Cookery.

Z

T A B.

T A B. V. Fig. 1.

Ethiopian P E P P E R.

SO called from its growing in *Ethiopia*. It was also called by some, *Vita longa*, for what Reason I cannot say; and by others *Amomum*, and *Cardamomum*.

SYNONYMA.

Piper Aethiopicum five *vita longa*, *Offic. Gerard. Emac.* 1540.

CHARACTER of Plant and Flower.

It grows upon a small Tree in the manner of a Hedge-Bush, whereupon grow Pods in Bunches, a Finger long, of a brown Colour, uneven and bunched or puffed up in divers Places, divided into five or six Cells, each whereof contains a round Seed, somewhat long, lesser than the Seeds of *Piony*; in Taste like common *Pepper* or *Cardamom*, whose Qualities it is thought to possess; for this Reason *Gerard* thinks it a Species of the latter.

This *Pepper* grows likewise in some parts of *America*. The Author just mentioned, says, he was favoured with a Branch of the *Ethiopian Pepper* from one Dr. *Stephen Bredwel*, who was a Physician in *London* in his Time: Now as I have never seen the Fruit, I can give no Account of the Seed; the Use therefore I would make of the Figure here, is only to add this Species of *Pepper*
to

to the others described already; as the Truth of its Existence is so well attested by *Gerard*. To this End I shall also give a Place here to another kind of **Pepper**; called by *Garcias*, and *Christophorus a Costa*, *Betle* and *Betre*.

T A B. V. Fig. 1, a.

B E T L E.

SOME call this *Tembul*, and the *Arabians* *Tambul*; in *Malabar* it is called *Betre*; in *Decan* and other Places, *Pam*; in *Molayo*, it goes by the Name *Siri*.

SYNONYMA.

Betle, *Offic.* *Betle* five *Betre*, *Ger.* 1357. *Emac.* 1541. *Betre*, *Betle*, *Betele*, five *Bethle*, *Park. Theat.* 1615. *Betre* five *Tambul*, *C. B. Pin.* 410. *Jonsf. Dendr.* 172. *C. Comm. Flor. Mal.* 60. *Betle* five *Beetle*, *J. B. i.* 437. *Chab.* 33. *Betele*, *Bont.* 91. *Beetla Codi*, *Hort. Malab.* vii. 29. *Tab.* 15. *Piper longum foliorum nervis decurrentibus, tenuioribus & mollioribus, Betle dictum, Hist. Oxon.* iii. 603. *Bulatwæla*, *Herm. Mus. Zeil.* 34.

CHARACTER of Plant and Flower.

Betle, says *A Costa*, is a Plant so like the Root, Branches, Leaves, and manner of growing of the **Pepper**, that, if sowed together, they can scarce be distinguished from

each other, at any considerable Distance, by such as are not well acquainted with both ; for it climbs and embraces whatever Trees are near it, in the manner of *Pepper*, but its Leaves are somewhat thicker than those of *Pepper*, yet agreeing intirely in their Size, and the Nerves or Veins spread upon them.

Garcias describes it thus : The Leaves of *Betre* are nearly like those of the *Malus Medica*, but a little longer, and narrower towards the Extremities ; having Veins or Ribs running lengthways upon them. Those are counted best that are ripe, and of a shining Colour ; yet several Women prefer the unripe, because they make a greater Noise in the Mouth. The *Betre* bears a Fruit like a Lizard's Tail, (*a*) in the *Maluccas*, which they eat there, having a most pleasant Taste. It is planted in the manner of Vines, and furnished with Supporters, by which it climbs and supports itself like Ivy ; some plant this and the *Areca* together, and make, with due Care, a beautiful shady Arbour.

It grows, says this Author, in all the maritime Regions of the *Indies* which the *Portuguese* have Knowledge of, being not found to grow in inland Places, but is carry'd from different Ports : It is however in small Quantities in *Dultabad*, a rich City in *Decan*, and in *Bisnagua*. This Plant does not thrive in a cold, nor over-hot Region.

These two foregoing Authors agree in all Respects, except in *Garcias's* Comparison of the Leaf. Neither of these has given a Figure of it, altho' we are obliged to them for their History of the Plant ; but the industrious

ous *Clusius* has atoned for that Deficiency, whose Care and Accuracy is manifest in every thing he has exhibited, and without whose curious Researches we should, even at this Time, be at a Loss for the Knowledge of several Things ; such is the Want of Curiosity, in those whose daily Business of Life is to traffick to the Eastern Regions.

He tells us (in his Notes upon *Garcias*, l. i. c. 18.) that one *Alphonsus Pantius*, Physician to the Duke of *Ferrara*, had sent him a Figure of a Branch of *Betre*, and also of *Areca*, with that of some kind of *Indian Nuts* ; but that because he was not sure whether they were right, he neglected giving them a Place in the former part of the History of *Aromatics*. Some Years after, he happened to fall into Conversation with *Fabricius Mordens* at *Vienna*, a Man famous for his Travels, and for his having lived some considerable time at *Goa* and other Places thereabout, to whom he shewed these Figures sent him by *Pantius*, to know whether they were true Representations of the Subjects intended. He declared them genuine, making such little Amendments as were necessary ; and accordingly *Clusius* gave that of the *Betle* a Place here.

This Author has also given the Figure of the grown Fruit, which he had from *Rassius*, the *French King's* Surgeon. The Plant appears by his Figure to grow like a *Vine* or that of **black Pepper**, twisting round a Tree, or Supporter ; and the Fruit is above an Inch long, consisting of five slender *Siliquæ* or Pods, twisted together
like

like a Rope; being bitter to the Taste, fragrant in the Smell, and having a Pedicle as long as its Body. He also further denies that the Leaves are like the *Malus Medica*, having received Specimens of the Leaves at several Times afterwards, from those who returned from the *East-Indies*.

V I R T U E S.

The Leaves of this Plant are extreamly bitter, in so much that when *Garcias* tasted them, he abhorred them ever after. It is for this Reason that they put the *Areca* and a little Lime to it, in order to render it more agreeable. Some, he says, mix the *Lycium* or *Borthorn* Berries with it; others the *Lignum Aloes* and *Musk*, which renders it so agreeable, that they chew it constantly, especially among the richer People, who esteem it much for the Fragrancy in the Breath of those who use it, and commend it also for its Virtues in helping Digestion, and being of Service in several Disorders of the Stomach. The *Indians* commonly eat it after their Meals, lest their Victuals should make them sick or disagree with them; and another principal use of it is to render the Breath sweet, being counted polite to scent their Mouths with it, before they converse with each other.

The Manner of preparing it is related by *Garcias*: He says, they cut off the Veins or Ribs of the Leaf, and put a little Lime made of Oyster-Shells upon it, and then bruise the *Areca*, folding it up in the Leaf, which makes

it ready for chewing. They commonly spit out the first Juice of it, being of a red Colour, and swallow all the rest that it produces. The Author of the *Voyage to Siam* agrees with our Author in his Account of the *Betle*, which being short, we shall insert it: "The *Betle* is the Leaf of a Tree of the same Name, and the *Areca* is a Fruit much about the Bigness and Shape of our *Acorns*. They cut that Fruit into four Parts, and having mingled it with Lime of Shells, they wrap it up in the *Betle* Leaf. This Mixture is so very savoury to them, either because they are accusom'd to it, or because of the great Effects they feel from it, that all eat of it, of what Quality, or in what Place soever they be. They pretend that it is a Specifick Remedy to fortify the Gums, help Digestion, and, above all, to make the Breath sweet.

T A B. V. Fig. 2.

THIS is the Pod that contains the Grains of Paradise; see its Description, Tab. III. Fig. 3. p. 90.

T A B.

T A B. V. Fig. 3.

Greater CARDAMOMS.

BOERHAAVE derives the Name *Cardamomum*, from the *Momum* of the Ancients, being, says he, celebrated for its heavenly Virtues, and this probably from *μῶμος* and *καρδία*, *quasi Momum Cordis*. The Arabian Physicians distinguish the greater and lesser thus: *Caculaa quebir*, *Cardamomum majus*; *Caculaa ceguer*, *Cardamomum minus*. It is also called, in *Malabar*, *Etremelli*; in *Zeilan*, *Encal*; in *Decan* and other Places, *Hil*, &c.

SYNONYMA.

Cardamomum majus, *Offic. Bont.* 127. *Raii Hist.* ii. 1204. *Cardamomum majus vulgare*, *Ger. Emac.* 1542. *Park. Theat.* 1576. *Cardamomum majus officinarum*, *C. B. Pin.* 413. *Jonsf. Dendr. Ger.* 1358. *Cardamomum cum filiquis longis*, *J. B. ii.* 205. *Chab.* 148. *Cardamomum medium*, *Bar. Icon.* 571. *Obs.* 1595.

CHARACTER of Plant and Flower.

There have been many Controversies among Authors concerning the *Cardamoms* and *Amomum*. *Pliny* counts four kinds, neither of which seems to have any Relation to the *Cardamoms*, as they do not answer to any one Character proper to them. *Ruellius* also errs in proposing

sing the *Capsicum* for the *Cardamomum Mauritanorum* ;
 and *Lacuna* also appears, in his Comments upon *Diosco-*
corides, to be as much at a Loss as he. *Garcias* how-
 ever was diligent in his Enquiry after the true *Carda-*
moms, and found that the *Malagueta*, or Grains of
Paradise, which are now erroneously substituted for, and
 called, the *Cardamomum majus* in Shops, is not that
 Fruit, by making strict Enquiries of the People who trade
 from *Portugal* to *Malagueta*, and also of the *Indians*
 themselves, who all assured him that the *Sacolaa* or
Cacolaa did not grow there. He at last fell in with a
Jew, who was a *Turkey* Merchant at *Cochin*, that told
 him he was to buy, among other *Aromatics*, the *Cacolaa*
quebir, which is the *Cardamomum majus* ; this made
 him solicitous to know whether it grew in other Places.
 At length the Factor of the Royal Merchandize in
Ceylan told him, that there it was to be found much
 larger than those he had before (which he calls *Nostrum*
Cardamomum.) But besides this, he had a further Con-
 firmation of the Differences, by being called to attend the
 Brother of a King in *Ballagate*, for whom he prescribed
 a Medicine, wherein he ordered the *Cardamomum majus*
 and *minus*, both which were brought him, and both appear-
 ed to be alike, except in Size, but having no manner of Re-
 semblance with the *Malagueta* or Grains of *Paradise*.

It is sow'd in the manner of Legumes, and grows to
 a Cubit high, from which hang Pods, containing about
 twenty Seeds or Grains, not (as *Cordus* says, l. i. *Dioscord.*)
 as big as Walnuts.

Both kinds, the greater and lesser *Cardamoms*, come from *Calecut*, and grow both there, and from thence to *Cananor*, as also in other Places in *Malabar* and *Java*, but not so plenty in this last Place, nor so light-coloured.

Cordus (says *Clusius* in his Notes upon *Garcias*) makes the greater *Cardamom* as large as a Fig, and the lesser smaller than a *Hazle-Nut*, in his first Book of *Dioscorides*; and in his fourth Book of Plants, makes the *Cardamomum Medium* equal to a *Nut*; and *Matthiolus*, in like manner, makes his Figure of the *Cardamom* like a Fig, which is nothing else but the *Grains of Paradise*, or *Malagueta* in the Pod; and which according to my Opinion, says he, ought not to be received among the *Cardamoms*. Accordingly he caused the true Figures of the greater and lesser *Cardamoms* to be engraved, and has given them a Place with his Notes mentioned above, which are very exact and true.

I have been so happy as to procure Specimens of both together with these, the Pod of the *Grains of Paradise*, and the *Amomum verum*, which I have delineated in this Plate, that the Reader may have, clearly distinguished at one View, what has puzzled and given Trouble to many; all which are explained in their Turns; however, the Pod (notwithstanding it was found and whole) of the greater *Cardamom*, yet the Seeds or Grains were so decay'd that I could not judge of their Form, and must therefore wait for another Specimen, which I hope soon to obtain; when I shall not neglect the Dissection and

Micro-

Microscopical Description of them ; for it is not sufficient that we know the Seeds are dark, angular, and larger than those of the **lesser Cardamoms**, without their Dissection.

V I R T U E S.

As the Virtues of the greater and lesser **Cardamoms** are the same, we shall give them a Place here, and refer to them from our Account of the latter.

Boerhaave counts the Virtues of these very wonderful, in his History of Plants of the *Leyden* Garden. He says, they have an Oil so aromatic, that it recreates the Spirits, warms and dissipates Flatulencies, and increases the generative Faculties, if the Roots or Seeds are used. If they be distilled, they yield the best *Camphir* of any. This Oil is in such Plenty in the Plant, that if it be distilled *per Vesicam*, it plugs up the Worm, so that nothing can pass. This is that Balsam which is called *Camphir*, and which keeps it Spissitude. Thus, says he, in some of our Aromatics the same Thing happens ; for the Oil of *Anise* and *Fennel* will concrete in the *Worm* like *Camphir*, but are easily dissolved, whereas the *Camphir*, as was said, remains concreted. It attenuates, and helps Digestion, hence it is of Service in Diseases of the Head, Stomach, and especially of the *Uterus*, for it promotes Urine, and the Menstrual Discharges ; and is good in Obstructions of the Liver, Spleen and Mesentery.

Garcias says, the **lesser Cardamom** is esteemed the best, being more odoriferous ; to which Opinion he as-

sents. He further says, the People of some Provinces of the *East-Indies* use it with the *Betle* as they do the *Areca*, and for the same Purposes.

T A B. V. Fig. 4, 5, 6.

Lesser C A R D A M O M S.

FOR the Etymology of these, see the former.

SYNONYMA.

Cardamomum minus, *Offic. Bont.* 126. *Ger.* 1358. *Raii Hist.* ii. 1204. *Bar. Icon.* 571. *Obs.* 1396. *Matth. valg.* 27. *Boerb. Ind. A.* ii. 128. *C. Comm. Flor. Mal.* 71. *Bod. in Theoph.* 1014. *Cardamomum minus vulgare*, *Ger. Emac.* 1547. *Park. Theat.* 1576. *Cardamomum simpliciter in officinis dictum*, *C. B. Pin.* 414. *Cardamomum filiquis seu thecis brevibus*, *J. B.* iii. 205. *Elettari*, 2. *Hort. Mal. XI.* 9. *Tab. VI. Enfal, Herm. Mus. Zeylan.* 66.

CHARACTER of Plant and Flower.

I find the celebrated *Ray* and *Boerhaave* have both given the Character of the Flower of this kind of *Cardamom*; and since few others have, the Reader has here both their Descriptions in their own Words. The former, in his *Method*, A. 122. "*Huic etiam florum, eisque*
 1 "*succe-*

“ *succedentium fructuum racemus in surculo peculiarē*
 “ *e radice exeunte ; flores autem tetrapetali, tribus petalis*
 “ *æqualibus ; quartum vero prioribus adversum paulo latius*
 “ *et angustius est, tenui stylo lingulaque donatum. Fructus*
 “ *cum virides, uvarum forma et sapore sunt, interna*
 “ *loculamenta partiti, sex seminum triangularium ordines*
 “ *continentes. In aliis speciebus fructus longiores sunt. i. e.*

The Branch of the Flowers, and the succeeding Fruit, arise from a particular kind of Twig or Stalk, springing out of the Root. The Flowers are four-leaved, three of which are equal ; but the fourth, which is placed opposite to them, is a little broader and more thin, furnished with a slender *Stylus* and a little Tongue. When the Fruit is green, it is like a Grape in Form and Taste, divided into three *Loculi* or Cells, containing six Layers of triangular Seeds. In the other Species the Fruits are longer.

Boerb. Hist. plant. Lugd. Bat. “ *Flores et racemi*
 “ *fructuum in caule peculiari non folioso ex radice orto ;*
 “ *flores tetrapetali, diffformes ovario insidentes ; fructus*
 “ *triloculares, polyspermi, acini angulosi, ex fusco nigri-*
 “ *cantes, involuto tenui et albicante pellicula, saporis*
 “ *acris et aromatici, ejusdemque odoris. Hic loci non*
 “ *floret, nec semina fert. i. e.*

The Flowers and Branches of the Fruit are supported by a particular Stalk without Leaves, springing from the Root ; they are *tetrapetalous* or four-leaved, not all alike, placed upon the Ovarium. The Fruits are *triloculated*, having several Seeds ; the Grains are angular, of a dark Colour,

Colour, covered with a slender white Pellicle, of a sharp aromatic Taste and Smell. They do not flower here (in the *Leyden* Garden) nor produce Seeds.

MICROSCOPICAL Description.

The Pod of the lesser Cardamoms (*Fig. 4. a.*) is something elliptical in its Form, consisting of three Lobes or Cells; these are distinguished by a longitudinal Dent or Depression on the external Surface between every two of the Angles, otherwise a transverse Section would make it an equilateral Triangle with strait Sides.

It is striated longitudinally with little fine Ridges, from the Stem to the Top, or upper Extremity. These are continued from the Body of the Pod, along a little Process or *Mammilla* at the Top, of the same Contexture with the Body, and having a Hole at the Extremity resembling the *Umbilicus* of some Seeds, and probably may serve for purposes analogous to those of that Part in every Seed, in which there appears a little *Lingula* or Tongue, nearly as high as the Edge of the Hole, which is bulbous all round. The Stem is also striated in the same Manner longitudinally, and is easily broken off.

A middling Pod is about half an Inch long, and about three Eighths in diameter; the Stem not so long as the Pod, and the little Process, just mentioned, almost an Eighth of an Inch. They are generally of an Oaker-Colour. The Taste of the Pod alone is somewhat aromatick, without any Pungency, and is tough in its Texture.

Each

Each Pod is divisible into three Cells (*b. c.*) which are elliptical, according to the Shape of the intire Pod. Each Cell contains a Cluster of Seeds compressed closely together, according to the Shape of the Cell; the number of each Cluster is generally five, sometimes six, and sometimes seven or eight. The more the Seeds approach to Ripeness, the darker they grow; but if not so ripe when gather'd, altho' the Pods are all of a Colour, yet the Seeds are a light brown. The Clusters are divided, as at *c.* by a fine transparent white Membrane.

Each Grain or Seed may be consider'd to consist of a convex and a concave Surface; the convex Surface (*Fig. 5. a.*) forms a quadrangular Figure, which in some Grains has the upper Side very narrow, in others, it is nearly equal to the rest. The Surface is rough, and of a dark brown Colour, having Rifings and Channels all over it, and at the Top, or upper Part (*Fig. 6. b.*) it has an *Umbilicus* consisting of a round Hollow, which is generally yellow at the Bottom, with a little lightish Process in the Middle, and having its Edge or Border rough like the rest of the Surface of the Grain. The concave Side (*Fig. 5. b.*) has a *Sinus* running longitudinally from the Top to the Bottom; this is also rough like the rest, is narrow towards the *Umbilicus*, and spreads wider downwards, till it is lost, and becomes superficial.

When this Grain is dissected by a transverse Section, the Cortex, which is a little spongy, immediately covers a black Substance like Pitch, as in the Grains of Paradise, but not so considerable in Quantity. This incloses

ses a Substance exceedingly white like that in those Grains, which we are inclined (as is said before in the Description of them) to think, is impregnated with much of a volatile Salt; and within this white Matter there is a Lump of such Resin or Gum, as makes the little *Crewit* in the *Grains of Paradise*.

This seems to confirm what the illustrious *Boerhaave* has observed in the Distillation of the *Cardamoms*, for perhaps this is that *Camphir* which he speaks of, mentioned above, that plugs up the Worm by concreting in it. The Figure of the whole Piece is something circular or oval, and is concave on one Side, and convex on the other, as appears by the transverse Section (*Fig. 6. a.*) in the Middle of which, there is a round Piece, lighter than that which encloses it, running from Top to Bottom, and equally transparent with it. These Grains are not quite so large as those of the *Grains of Paradise*, nor so extreamly pungent to the Taste, and have an agreeable aromatic Flavour.

For the Virtues of the lesser *Cardamoms*, see our Description of the greater just before.

T A B. V. Fig. 7, 8, 9, 10.

True A M O M U M.

A MOMUM is derived, by some, from the *Greek* Word *Ἀμωμος*, *Maculæ expers*, because of its Value or Efficacy, and the Esteem had for it. By others

παρα

παρὰ τὸ "Αμωμον, quod frutex minime vituperandus, being a Fruit not to be discommended; both these import the same thing, and seem to be the proper Etymology.

SYNONYMA.

Amomum, *Offic. Comm. Flor. Mal.* 14. *Plant. usu.* 18. *Barr. Icon.* 571. *Obs.* 1393. 27. Amomum verum, *Ger. Emac.* 1548. *Raii Hist.* ii. 1697. Amomum genuinum, *Park. Theat.* 1567. Amomum racemosum, *C. B. Pin.* 413. Amomum novum cardamomi vulgaris facie, five Indicus racemus, *J. B.* ii. 195. *Chab.* 127. *Elettari*, i. *Hort. Mal.* XI. 9. Tab. 5.

CHARACTER of Plant and Flower.

The Diversity of Opinions among Authors, concerning the true Amomum, have caused many Errors to creep into the Shops, where we find, from old Dispensatories, several other kinds of Seeds substituted instead of these; and especially in the Venice Treacle, into which the Sison or Amomum officinis nostris of Caspar Bauhine, has been intruded and sold for a long Time: which is no more than the Bastard Stone-Parfley, spoken of in its Place before.

The Name Amomum is given to a Plant called the Rosa Hierichuntina, the Rose of Jerico, by Cordus. Clusius imagines in one Place, that the Jamaica Pepper was the Amomum, of which he had a Branch with the Fruit sent him, by one James Garret from London, who (after he has taken some Pains to describe it, calling it

the *Amomum quorundam*, and inclining a little to think it the *Amomum Dioscoridis*) at length confesses upon considering it maturely, that he thinks it the *Garyophyllon* of *Pliny*, because after that Author has described the *Pepper*, he subjoins, in the twelfth Book and eighth Chapter of his Natural History, that there is a Fruit in *India* like the Grain of *Pepper*, which is called *Garyophyllon*, being a little larger and more fragile. This, he owns, he was the more ready to accede to, because it has a Flavour, which in a great Measure was very like that of the *Clove*, and being chew'd resembled it much in Taste. *Clusius* was ignorant that this was the *Pimenta*, and that it is a Native of the *West*, and not, that I can find, of the *East-Indies*; and we had so little Knowledge of it, in the Time of *Johnson*, that he is satisfied with this Account of *Clusius*, and gives the Reader a bare Translation of his Words: So that *Pliny* could not have had any sort of Knowledge of the *Pimenta*, or *Jamaica Pepper*. The *Ethiopian Pepper*, and the *Piper caudatum*, were both taken for the *Amomum*, and so were the *Cubebs*; and because of the Uncertainty that was but too manifest amongst Authors, the *Acorus* was often used also as the *Amomum*. *Clusius* again, in his Notes upon *Garcias*, takes Notice of a Leafy Plant that has no Resemblance to any aromatic Fruit or Berry, as an *Amomum*, but calls it *Amomum quorundam*, which the latter obtained from the Physicians of the King of *Decan*, under the Name of *Amomum*; this, he fancy'd, squared with *Dioscorides's* Account of that Aromatic,

and

and resembled the *Pes columbinus*, or Doves-foot. What is now called the *Amomum Plinii*, has no Relation to what we are endeavouring to find, being a Plant of another Nature intirely, which is the *Solanum fruticosum bacciferum* of C. B. or the Tree Night-shade.

We might recount several other Mistakes here, if our intended Brevity did not forbid it; we shall therefore only add, that these Errors might have been handed down from one to another for ever, if the learned *Nicholaus Marogna*, a Physician of *Verona*, had not industriously and ingeniously refuted them, and himself described the true *Amomum* of the Ancients, in a Commentary upon the Opinions of *Dioscorides* and *Pliny* concerning this Fruit.

It appears, however, in *Clusius's Auctarium*, under the Title of *Amomum spurium*, that *Johannes Pona* had sent him a Bunch of the *Amomum*, described by *Marogna*, and called by him *Amomum legitimum*; who confesses that they had a very great Resemblance to the *Cardamoms*, which are the lesser kind now frequent in our Shops; and in every other part of his Account of them agree to the true Description of the legitimate *Amomum* of *Marogna*, and of those I have now under my Inspection. He seemed, however, to doubt their being the right, but because they were not common, thought it proper to give a Figure of the Bunch he received, which is very well done, and differs not much from that which our ingenious Physician had delineated in his said Commentary before. That it has some Relation to the

Cardamoms, will appear by my Microscopical Observations on them by and by; in the mean Time I believe it will not be improper to give *Dioscorides's* Description of his *Amomum*, and refer the Reader to *Marogna's* Comment for a further Account of it.

He says: " The *Amomum* is a little Shrub, whose
 " Fruit is in Bunches like *Grapes*, having a little Flower
 " like the white *Violet*, and Leaves like *Bayony*. That
 " which comes from *Armenia* is best, inclining to the
 " Colour of Gold, whose Wood is yellowish, and of a
 " fragrant Smell. But the *Amomum Medicum*, *Median*
 " *Amomum*, because it grows in moist and watery
 " Places is not so firm, being large, greenish, and soft
 " to the Touch, with a veiny Fruit, and a Smell like
 " *Origanum*: But the *Amomum Ponticum*, *Amomum*
 " of *Pontus*, is yellowish, short, not difficult to be
 " broken, branched, full of Fruit, and very fragrant.
 " Chuse those which are freshest, white or reddish, and
 " which hang loose, and are full of Seeds, having a
 " strong Smell, and no Rottenness, with a Sharpness to
 " the Taste, and not vary'd in Colour."

It is plain from *Dioscorides's* Account, that what he here describes is the true *Amomum* of the Ancients; and altho' many Moderns have mistaken *Pliny*, in imagining he had any Notion of the *Solanum* mentioned before, in his Description of that Fruit; it will appear that he and *Dioscorides* described the same Thing; for which Purpose I have thought it necessary to bring hither his Account also, that by comparing them the Reader

der may be better able to judge of the Truth, and that what he says is no way applicable to the *Solanum*, commonly called *Amomum Plinii*.

“ The Fruit of the *Amomum* is thought to grow like
 “ the *Indian* wild Vine, being a veiny Fruit ; it grows
 “ a Palm high, and is pulled up by the Roots in hand-
 “ fulls, and gently tyed together, being very easily broken.
 “ That which resembles the *Pomegranate* in its Leaves,
 “ which are not wrinkled, and of a yellowish Colour,
 “ is most in Esteem ; the second in goodness is paler ;
 “ the herbaceous kind is still worse, and the worst of
 “ all is the white ; this happens from being old and de-
 “ cay’d. It grows in that part of *Armenia* called *Otenæ*,
 “ in *Media* and in *Pontus*. It is counterfeited with the
 “ Leaves of *Pomegranates* stuck together and wrap-
 “ ped up in the Manner of these Fruits with a liquid
 “ Gum. There is also another Fruit which is called
 “ *Amomus*, less veiny, harder, and having less Smell ;
 “ whence it appears that it is either a different Fruit, or
 “ the same gathered immaturity. The *Cardamomum*
 “ with the long Seeds is like these in Name and Fruit.
 “ There are four kinds of the *Amomum* gathered also
 “ in *Arabia* : That which is greenest and fattest with
 “ acute Angles, and hard to be broken, is best ; the
 “ next is of a light yellow ; the third is shorter and
 “ blacker ; but the worst is that which is variegated,
 “ easily powder’d, and having an inconsiderable Smell,
 “ which ought rather to be classed with the *Costus*.
 “ This also grows in *Media*.

From these Words of *Pliny*, it is clear he meant the same thing with *Dioscorides*, and not any thing else. One would wonder how a Plant described by *Pliny* to be but a Palm high, and pulled up in handfulls, could be thought in any wise analogous to the *Solanum arborescens*, which grows like a Shrub, and is two or three Cubits high, and whose Fruit cannot answer to his Character of that of the *Amomum*; besides, he compares it to the *Labrusca* or *Indian wild Vine*, which ought to have given those who mistook him another Idea of the *Amomum*.

Now in order to clear up this so-long-reigning Error, and give more Satisfaction to the Reader concerning the true *Amomum*, we shall subjoin to this, *Marogna's* own Description of the Specimen he receiv'd, with his Comment upon the Words of *Dioscorides*, and then proceed to our Microscopical Description of that which I now have before me.

“ The *Amomum* (says *Marogna*) which I describe, is
 “ not an entire Plant, but a Cluster of the Fruit, as it
 “ grows together on one Stem (of which you have here
 “ the Figure, exactly of its natural Size) in the manner
 “ of a Bunch of Grapes. This Bunch is composed of
 “ ten or twelve Berries or Fruits, or fibrous Husks,
 “ which press closely against each other. The Cluster is
 “ supported by a round Twig about an Inch long,
 “ veiny, fragrant, pungent to the Taste, and covered
 “ thick with Leaves; the smallest of which are disposed
 “ like little Scales, in those Places where there are no
 “ Berries.

“ Berries. The larger ones furround the Berries by six
 “ and six, forming a *Calix* round it in the Shape of that
 “ which we commonly see about the *HazleNut*. Of these
 “ larger Leaves three are commonly half an Inch long,
 “ the other three something shorter, are soft, veiny, acrid,
 “ and odorous ; but those in particular which invest the
 “ Berry, have much the Resemblance of those of the
 “ *Pomegranate*, thick at the Top, turning a little out,
 “ and seldom intire. The Bigness and Form of the
 “ Berry, which is round, is nearly that of the common
 “ Grape. The Berries have some Veins, like Lines, drawn
 “ thro’ their Length. They have besides, on every one
 “ three Furrows, which demonstrate between them as
 “ many Risings, shewing the three internal Orders of the
 “ Seeds. Every Berry has in it three Divisions of Seed-
 “ Vessels, which are separated from one another by
 “ three very thin Cartilages, each having many angular
 “ Seeds, every one in a delicate Membrane of its own,
 “ but lying so close together, that altho’ there are several
 “ in each, they appear only as three long Seeds. The
 “ Colour in the same Branch is equal or uniform, but
 “ some are pale, others white, and others red. In the
 “ white Branch are commonly form’d unripe and empty
 “ Seeds ; in the red on the contrary, they are more solid.
 “ They turn from red to black on the outer Surface ;
 “ in the Inside they are of a white Substance, hard,
 “ but not very difficult to break, like that of the *Car-*
 “ *damom*. The Smell of the Branch is naturally strong,
 “ but sweet, something like that of the common La-
 “ vender,

“ vender, but much more pleasant. The Seeds, taken
 “ out of the Berry, afford a greater and more pungent
 “ Smell, but not so agreeable. The Berry and Seeds are
 “ in themselves aromatic and acrid, only the Flavour
 “ of the Cluster when together diminishes it. In the Seeds,
 “ when the Covering are taken off, the Smell is perceived
 “ more penetrating, and almost like the common *Camphir*.
 “ There remain the Writings of many Ancients, who
 “ mention the *Amomum*; among the *Greeks* were *Theo-*
 “ *phrastus*, *Galen*, and *Dioscorides*; among the *Latins*,
 “ *Pliny*. *Galen* and *Theophrastus* have treated sparingly
 “ of it, not having left any Description: *Theophrastus*
 “ only names the *Amomum* among the Aromatics, which
 “ it was customary to make use of in Compositions of
 “ many valuable Ointments; and *Galen* only assigns the
 “ Virtues, giving the Name, without any Description
 “ of the Plant, which is all that can be learned from
 “ either. But *Dioscorides*, and *Pliny* (our Countryman)
 “ have left such Descriptions of the *Amomum*, as, if put
 “ together, one may have a clear and true Knowledge
 “ of it: And some Moderns, who have industriously sepa-
 “ rated these two Descriptions, and endeavoured to under-
 “ stand them differently, have only taken pains to render
 “ the Knowledge of the true *Amomum* more obscure;
 “ for they take away from *Pliny* the Credit of having
 “ known the *Amomum*, as if he were ignorant of it,
 “ and describe a Plant quite different from it, and give
 “ the Honour to *Dioscorides* entirely.

MICROSCOPICAL *Description.*

The Fruit of the true *Amomum* grows in Clusters round its Stem, upon a short Pedicle, as at *Fig. 7*. Each Fruit is round, as at *Fig. 8. a.* and striated in a longitudinal Direction, from the Pedicle to the *Mammilla* at the Top; it is divided into three Lobes or Divisions, which appear plainly by their Depressions on the outside, but more particularly by the transverse Section *b*, where the three Clusters of the Seeds are apparent, and are divided or separated from each other, by a fine white Membrane running from the Center in three Leaves, in an angular Direction to join the Husk, and form the three Cells wherein the Seeds lye, in the same Manner with that of the lesser *Cardamoms*. The Place of the Insertion of each Leaf of the Membrane, on the Inside of the Husk, points out the Depressions on the Outside in the same Manner also.

The Husk of the *Amomum* is not so tough and compact as that of the *Cardamom*, being more of a chaffy Construction; their Colour differs not much, the former being of a Chaff, or Straw-Colour, and the latter something more upon the Oaker. This Fruit is about the Size of an ordinary *Kentish* Cherry.

When the Husk is open'd and stripped off, the three Clusters of the Seed remain whole, being closely compressed together and covered intimately with the same kind of Membrane with that which divides the Lobes or Clusters, but much more delicate, and in many Places

as if it extended between, and clothed, every particular Grain of the Seed.

A Grain of this Seed (*Fig. 9.*) is somewhat larger than that of the *Cardamom* just mention'd, and represents a dry'd Fig in its Form. This seems to be occasioned by the Manner of their Compression upon one another, because no two of them are alike in every Respect. The more mature the Seeds are, the less they are rugated; this I judge from the Quantity of the *Parenchyma*, which is always most apparent in those Seeds that are least depressed. Each Seed has a round *Umbilicus*, not much unlike that in the Grains of the lesser *Cardamom*.

In making a transverse Section of one of the Grains (*Fig. 10.*) the manner of the Depressions and Risings is more easily discerned; and altho' each of these differs greatly in its Shape from that of the *Cardamom*, *Fig. 5*, yet their Contents are the same; that is, within the spongy *Cortex* is contained the white *Parenchyma*, and within that, the Substance that resembles the *Resin* or *Camphir*, mentioned in the *Cardamom*, *Fig. 6*, and the Grains of *Paradise*, *Tab. iii. Fig. 17*, only differing in the Form; that of the Grains of *Paradise* being like a *Crewit*, that of the *Cardamom* of a *Semi-lunar*, and that of the *Amomum* of a kind of quadrangular Figure. From this resinous Appearance, together with the white, probably, saline Substance, in these three Seeds, one would be induced to think they were of a Family, and that they differ very little, if at all, in their Virtues; and in fine, that the greater and lesser *Cardamoms*,

moms, the *Grana Paradisi*, and the *Amomum*, are only different Species of the same Genus. The Pods of all these are drawn of their natural Sizes with their included Seeds, but the Seeds of each are enlarged microscopically for their better Explanation, according to the Purpose of this Work.

The Taste of the Grains of the *Amomum*, does not much differ from those mentioned above, being very pungent, and fragrant to the Smell.

V I R T U E S.

These agree in their Qualities with the *Cardamoms*, and consequently in their Virtues, which see.

T A B. V. Fig. 11.

Tail'd P E P P E R.

TH E Spaniards call this kind the *Pimenta del Rabo*.

S Y N O N Y M A.

Piper Caudatum, Ger. *Emac.* 1540.

C H A R A C T E R of the Fruit.

These Grains are like *Cubebs*, round, full, and black, of a sharp quick Taste, like the common *Pepper*, and having a pleasant Smell. They grow on a small Stem in

Clusters. The King of *Portugal* forbid the Importation of this kind of Pepper, lest the Sale of the common **black Pepper** might be hindered, and this more esteemed. *Clusius* says, that his Friend *Fabricius Mordente* told him, the *Indians* put Bunches of these Grains while green into their Mouths, and draw away the Stem, leaving the Grains within their Teeth, and eating them with great Pleasure; and that he did the same, and found an agreeable Sweetness, mixed with a mild Sharpness, which render'd them pleasant.

That Author, besides the Information of his Friend *Fabricius*, received also some Account from one *James Garret* of *London*, with a Specimen of the *tail'd Pepper*, consisting of a Bunch of the Grains, and the Drawings, which he has caused to be engraved with his Notes upon *Garcias*, in his first Book of *Aromatics*, Chap. 22. of *Pepper*. And as a farther Proof of the Existence of this kind, he tells us, that he received seven Years after, the same sort of Grains from one *William Parduyn* and *Peter Garret*, from the Coast of *Guiney*: Some of the Bunches were about an Inch, some two or three Inches long. Twenty, thirty, or sometimes more of the Grains stuck by their little Pedicles to a slender Stalk, less somewhat than the **common Pepper**, but not less hot in Taste; they were pretty hard and solid, and much of the same Colour; but whether the Plant upon which they grew, twin'd itself about Trees or other Supporters, like the *black Pepper*, he could not learn.

Having

Having not seen any of these Grains myself, I can give no Account of their Parts, but when an Opportunity offers, shall not fail communicating it. It was, however, necessary to enumerate this kind here, that the Reader may have at the same View every Species of those warm Fruits we now treat of; which we hope will be as entertaining to the Curious, as instructive.

The Virtues and Uses of this kind of **Pepper**, must from its Character be analogous to that of the other kinds.

T A B. V. Fig. 12. a.

Cow-itch, Coughage, or Stinging-Beans.

THIS is called in *Latin Phaseolus Zurratensis*, or *Suratensis, filiquis hirsutis*. *Phaseolus* is a common Appellation for all the Species of *Kidney-Beans*; it was the Name of a long kind of Boat among the Ancients, which sailed very swiftly, to which the Shells of **Beans** bear a great Resemblance. *Zurratensis*, or *Suratensis*, from its native Place in the *Indies*, whence it is brought. Why it is called **Coughage**, I cannot give a Reason, and as to the Word **Cow-itch**, I am as much at a Loss for the meaning of the first Part; but the second Part seems to be given it, from the Itchings caused by the Hairs of the Pods, if rubbed upon the Skin of any one; yet both seem

seem to be Corruptions of the Word *Cobuge*, which I find in some Authors.

SYNONYMA.

Couhage, *Offic.* Phaseolus Zurratensis, filiqua hirsuta, Couhage dicta, *Raii Hist.* i. 881. *Flor. Mal.* 212. *Rivin. Irr. Tetr.* Phaseolus pruritum excitans hirsutie filiquarum, *Ger. Emac.* 1215. Phaseolus Zuratensis filiqua hirsuta pungente, *Hist. Oxon.* ii. 69. *Herm. Hort. Lugd. Bat.* 492. Phaseolus utriusque Indiæ lobis villosis, pungentibus, minor, *Par. Bat. Prod.* 365. *Cat. Jam.* 69. *Hist. Jam.* i. 37. Phaseolus Brasilianus filiquis durante lanugine obsitus, ricini fructu, *Hort. Par.* 140. Phaseolus Suratensis, villosus, filiqua hirsuta, pungente, *Hort. Bos.* 27. Nai Corana, *Hort. Mal.* viii. 61.

CHARACTER of Plant and Flower.

For the Character of this Plant we are obliged to the *Hortus Malabaricus*, whose Description is as follows:

“ It flowers *July* and *August*, about *Mangati*, *Poiga*,
 “ and other Places. The *Root* spreads its capillary
 “ Fibres wide upon the Sand, whose *Cortex* is of a dusky
 “ white, bound gently with woody Filaments, and hav-
 “ ing a sharp disagreeable Smell.

“ The Stalks are round, smooth, and *clavicated*, or
 “ wreathed. The Leaves, whose Pedicles are long,
 “ smooth and round, are three together, oblong, contract-
 “ ed at the Top to a Point, slender, with a plain Surface,
 “ and set round with minute Hairs. The middle one
 like

“ like a Spear ; the main or middle Rib, is a little to
 “ one Side, and is somewhat eminent.

“ The Flowers are papillonaceous, tetrapetalous and
 “ irregular, one of which is shaped like one's Nail, rigid
 “ and transparent, with long Veins ; and with the
 “ *Stilus* that lies at the Back of the Flower, constitutes
 “ a callous Nail. Two of the Leaves are erect, em-
 “ bracing the Angle at the Side, narrow and oblong,
 “ striated with little Veins, longitudinally ; one Edge
 “ being more round than the other, of a dark reddish
 “ Purple ; the fourth, with which the *Ungula* or Nail is
 “ bent with its *Back*, is shorter, rigid, and broad, sur-
 “ rounding the *Unguiculæ*, or little Nails, of the rest,
 “ of a light Purple-colour, and having no Smell.

“ The *Stilus* which is contained in the *Ungula*, is
 “ thick, white, like a *Theca* or Case, and surrounded
 “ by little *Stamina*, which transmit a white hairy *Stilus*
 “ arising from a filiquous, long, green Rudiment.

“ The *Calix* has four cuspidated, green, irregular
 “ Leaves ; the largest closely binds the short Leaf of the
 “ Flower ; two of these are narrower and much less,
 “ closely binding the *Unguiculæ* of the Leaves also :
 “ The fourth is loose, with a longer Point, receiving
 “ the upright Leaves at the Back of the *Ungula*. The
 “ Buds of the Flowers are cuspidated.

MICROSCOPICAL Description.

The Cowitch Pod (*Fig. 12.*) is, in its Shape, every
 way like those of the Kidney-Beans, hanging upon a
 Stem,

which is in a contrary Direction to the *Apex*, and, when dry'd, looks woody; they grow each upon a little Pedicle about half an Inch long, which are distant from one another some an Inch, some an Inch and half; and at the Top of the Stem it is something thicker, from which two or three Pods grow together.

The Pod which I am now observing has five Beans in it; these lie in their proper Cells distinct from each other by a Ridge, and lined with a fine Membrane of a brown Colour, and smooth like *Satin*. These Ridges that divide the Cells, altho' the Pod is close shut, do not meet so as to stop up each Bean in its Cell, but leave an elliptical Opening, so that there is a Communication between them.

The outside of some Pods is entirely cover'd over with a kind of hairy *Spiculæ*, which are so small as not to be distinguished by their Forms with the naked Eye, and are only discernable by their Colour upon the Pod, which is exactly like that of the red Hair of a Human Head. In other Pods the Surface is not quite covered with these *Spiculæ*, only in Spots, particularly near the long Ridge on the Body of the Pod, and in the Hollows between the Beans. Upon examining these *Spiculæ* with a double reflecting Microscope, they appear (as at *Fig. 12. b.*) to run to a very sharp Point, and to be tubular, being for a considerable Way from the Points downwards toward their Basis, stuck full of little Points or Beards, which hinder their being easily discharged from the Skin, when once stuck in; like a Fishing-Hook, which is hindered from

from returning, by its Beard, when once the Fish is hooked.

The Bean (*Fig. 12. a.*) is oval, and not at all reniform'd like the Kidney-Beans. It is finely polished, and has a brownish Ground spotted irregularly with black, which makes it look like a beautiful polished *Pebble*. It is not so thick as it is wide, and therefore is somewhat depressed, altho' convex and plump; having a Slit on its forepart, surrounded with a white *Labium*, which rises from the Surface of the Bean, of a bulbous Substance) rough within, as it appears by the Microscope, and out of the Slit, at one End, having a leafy Membrane or Tongue, which is discernable with a small Magnifier. An ordinary Bean of these, is a little more than three Eighths of an Inch long, and in an Oval proportion.

The *Parenchyma* is farinaceous like common Beans, having no discernable Smell, and being chew'd has nothing acrimonious in Taste, differing not much from that of a common *Horse-Bean*.

V I R T U E S.

The Beans are said to be used in Dropfies by the Inhabitants where they grow; but from their Taste, they can hardly be judged efficacious in such Cases; and as to the *hairy Spiculæ*, altho' they stand mentioned in some Books among Medicinal Simples, yet they are of no use; serving only to excite an intolerable Itching upon the Skin, wherever they are rubbed; and are therefore dangerous to meddle with, lest they might

by chance get into the Eyes, where they would undoubtedly produce very pernicious Effects. Whilst I was examining the Pod, some of these *Spiculæ* touch'd the Back of one Hand and made it itch greatly, to which instead of scratching, I instantly apply'd some Oil, which prevented it immediately; the same happened to my Cheek, by touching it with one of my Fingers accidentally, whereon were some of the *Spiculæ*, which was cured in the same manner; whereas the more the Part is rubbed, the more it itches, and a Flux of Humors is thereby brought to it.

The Roots boiled in Wine promote Urine, and, with Oil, ease Pains of the Gout; the Leaves bruised and apply'd to Ulcers cure them.

We must not forget here, a curious Receipt, which I find in the learned Mr. Ray's *History of Plants*, l. 18. c. 1. and is as follows: "Infuse twelve Pods of this Plant
" in about two Quarts of Ale, and give about half a Pint
" of the Infusion every Morning; it is a most certain
" Remedy for a Dropsy. One — *Husbands*, Esq; com-
" municated it, who lived in the Island of *Barbadoes* se-
" veral Years, and often experienced it upon his Negro-
" Servants." The Beans eaten, are said to promote
Venery.

T A B.

T A B. V. Fig. 13, 14.

C H I C H E S.

TH E S E are called so from the *French* Word *Chiche*, which had its Rise from the *Latin* Word *Cicer*; this springs from the *Greek* Word *κίκυς*, *Robur*, Strength, because they are said to strengthen the Body. They were also called *Cicer Arietinum*, *Ram's Chiches*, from their having some Resemblance to a Ram's Head. The *Greeks* call it *ἐπέβινθος*, which, according to *Aristophanes*, signifies a Man's *Pudenda*, either because two Seeds in the Seed-Vessels are like the Testicles in the *Scrotum*, or because it greatly provokes Venery. We consider particularly here, the red, or black *Chiches*.

SYNONYMA.

Cicer rubrum & nigrum, *Offic.* *Cicer Arietinum*, *nigrum vel rubrum*, *Park. Theat.* 1075. *Cicer Arietinum*, *J. B.* ii. 292. *Dod. pempt.* 525. *Cicer sativum flore ex purpureo rubescence, semine rubro*, *C. B. Pin.* 347. *Cicer Arietinum fructu nigro*, *Mor. H. R. Bless.*

The white *Chiches* differ so little from these in their Shape, that Authors have called it *Arietinum*. It is call'd by the Shops *Cicer album*, by *Caspar Baubine* *Ciser sativum*, as well as by *Ger. Ray*, and the *Oxford Hist.* *Ciser sativum album* by *Parkinson*, and by *John Baubine*, *Cicer Arietinum*.

CHARACTER of Plant and Flower.

The Plant rises with round, branched, and somewhat hairy Stalks, which stand upright by their own Strength. The Leaves are indented, and seem composed of many little ones growing upon one Rib, and set one opposite to the other, somewhat smaller than the Leaves of wild **Germander**. The Flowers are small, either white, or of a reddish Purple; after which come little short Cods puffed up as it were with Wind like Bladders, in which lie two or three Seeds, as large as Pease, either white, red, or of a purplish black. The Root is slender, white, and long. The great *Boerhaave* describes it thus: The Stalks are slender, woody, hard, branching, and a little villous; the Leaves small, villous, double and indented, sticking to a single Rib; the Flowers are small, leguminous, white or red, which are succeeded by short Pods like a blown-up Bladder, containing Seeds like a Ram's Head. It is either red or white; the red for the Shops, and the white for the Kitchen. His particular Character of these is, *Cicer rubrum sunt ciceris sativi semina rotunda, angulosa, piso majora, unico angulo acuto prædita, coloris ex fusco rubentis, saporis viscosi & leguminosi; radix longa, exigua, alba.*

It has a Pea-shaped or papillonaceous Flower.

Mr. *Miller* says, there are some other Varieties of this Plant, preserved in curious Botanical Gardens abroad; but these here enumerated are the common sorts, *viz.* that with the white Flower, that with the reddish Seeds,
that

that with the black Seeds, and that with purplish red Flowers and red Seeds, which are cultivated in Kitchen-Gardens in *France, Italy* and *Spain*; and he believes are all seminal Varieties, which alter and change the Colour of their Flowers and Seeds, like the common Garden-Beans. It flowers in *June* and *July*, and the Seeds are ripe in *August* and *September*.

MICROSCOPICAL Description.

There is a good deal of Reason for comparing the Chickpe Grain to the Head of a Ram; for each of them (*Fig. 13.*) consists of a round or back part, and an *Apex* or Snout. I have now before me both black and red Grains, and find the same Features in both, without the least Difference; therefore this Description will be sufficient for both: There are besides this Shape, which indeed favours the *Simile*, several Depressions upon the Grain which add still to the Likeness of that Head; and these we shall consider in particular. On the upper or convex Side there is, in most of them, a longitudinal little Ridge, and a Depression on each Side, which resembles the Rising in the frontal Bone of a Sheep; and, a little further forward, two Risings, one on each Side, which look like the superciliary Eminencies of the Eyes. Each Side of the round or occipital Part has a Depression that also adds to the same Image; but what is yet a greater Argument for it, is, that the under Part (*Fig. 14. a.*) is flattish, having an Edge on each Side, which may be compared to the Edges of the under

der Jaw. In the Center of this flat Part there is a little mamillary Rising very remarkable, and just under the *Apex* or Snout, an oval Hole, whitish at the Bottom, which is the *Umbilicus* of the Seed; besides which there is an apparent *Sulcus* on each Side the *Apex*, running a little way back, and is a close Resemblance to the *Rictus Oris*. The Husk is thin and fragile, and, when taken off, looks like thin Tortoise-shell; and the *Nucleus* or *Parenchyma*, is of a yellowish white, exactly like the Substance of a split Pea, without the Covering, and having the same Taste. The intire *Nucleus* has the same Depressions which appear on its Husk or *Cortex*; and a fore View of it (*Fig. 14. b.*) shews the naked *Apex*, with the Hole underneath, which is but superficial; and the Seam which distinguishes the Tip of the *Apex*, I take to be the Rudiment of the Plant, for it is easily separated in that Seam. The natural Size of this Seed appears *Fig. 13. a.* being almost three Eighths of an Inch from the *Apex* to the outer Edge of the *Basis*, and something narrower; and its Taste is leguminous, like dry'd Pease, as I observed before.

V I R T U E S.

The *Chiches* are so near of kin to our white Pease, that they are commonly eaten in *France* and *Spain* in the same Manner, being preserved for boiling in Winter. They are scarce worth planting in *England*, says Mr. *Miller*, our Pease affording double the Quantity on the same Ground, which are preferable in Goodness; but in warmer

warmer Countries, where our delicate sort of Pease seldom thrive well, these may supply their Place, and perhaps in those Countries they are much more fruitful than with us.

These Seeds are used instead of Coffee, and are scarce to be distinguished from them, having a very fine Flavour. *Lemery* tells us the same Thing, only he observes they are a little more bitter, and says, that equal Quantities of these and Coffee will be pleasant and palatable. It is certain that of all the Grains that have been used in Imitation of Coffee, none comes so near it as the *Chiches*; it has been observed, that those which come from *Spain* have more the Taste of Coffee than any other, and, by roasting, lose intirely their leguminous or pulsy Taste.

As to their Medicinal Virtues, *Galen*, *Aetius*, and several others, affirm, they are great Lithontriptics, and actually break the Stone; this however is doubted by others, I believe with Reason. Nevertheless they generally are esteemed diuretic, aperitive, and attenuating; they certainly must generate Flatulencies in the Intestines as Pease or Beans do. They are esteemed Generators of Milk and *Semen*, insomuch that *Galen* says, they fed their Stallions with them in order to render them more prolific.

Plutarch asserts that no Worms breed in, or devour the *Chiches*, and that therefore they were given as an Emblem of a durable Affection to the marry'd Pair in their Ceremonies: How such Tradition could be propagated is not easily accounted for; for among those I have before me, several are Worm-eaten, the *Cortex* being full of

of Holes, and the Pulse reduced to Dust in the same Manner as other Pulse or Worm-eaten Wood.

The Ancients used these for Food, and they were in as much Esteem among them for this Purpose as any other Pulse; wherefore one of the illustrious Families the *Cicerones*, took their Name from the *Latin* Name, *Cicer*, of this Pulse, as others did from the other kinds; for *Pliny*, in his eighteenth Book, Chap. 3, where he relates something concerning Lands, Cattle, and the most famous Tillers of the Ground, shews us, that the different sorts of Pulse gave Names to those who made it their Business to cultivate them, or who produced the best. Thus the *Pisones* came from *Pisum*, Pease, or from *Piso* to stamp, or bruise them in a Mortar. The *Fabii* from *Faba*, a Bean, the *Lentuli* from *Lens*, the *Lentile*, &c.

In external Applications they are of service by way of Cataplasm to discuss Tumours of the *Testicles*, *Breasts*, or other Parts; and *Dioscorides* says, that a Decoction made with these and *Rosemary* is good in the *Jaundice*, *Dropfy*, or for Pains in the Sides. They are also good with other emollient Diuretics for that Intention.

T A B. V. Fig. 15.

BAY-BERRIES.

DIOSCORIDES calls the Bay-Tree *Δάφνη*; in *Latin* it is called *Laurus*. *Δάφνη* of *δαιω*, *uro*, to burn, and *φωνή* *vox*, *sonus*, a Sound, because it makes a Noise

Noise as it burns. *Laurus* was by the Ancients called *Laudea*, which by changing the *d* into *r*, became *Laurea*, and then *Laurus* from *λαίω*, *fruor*, to enjoy ; there being no greater Reward, or Enjoyment, than the Praises that arise from Acts of Goodness and Virtue. Hence *Laudo*, to praise, comes from *Laurum do*, to bestow a Laurel, because the Laurel Crown was given as a Reward for Virtue or Valour.

SYNONYMA.

Laurus, *Offic.* *Ger. Emac.* 1407. *Park. Parad.* 598. *J. B.* i. 405. *Raii Hist.* ii. 1688. *Chab.* 31. *Laurus vulgaris*, *C. B. Pin.* 460. *Tourn. Inst.* 597. *Elem. Bot.* 470. *Boerb. Ind. A.* ii. 216. *Laurus minor*, *Park. Theat.* 1488. *Laurus domestica tenuifolia*, *Jons. Dendr.* 229. *Laurus mas & foemina*, *Ger.* 1222.

CHARACTER of Plant and Flower.

The *Bay-Tree* rises sometimes to a great Height, is full of Boughs covered with a green Bark ; the Leaves are long, firm, of a darkish Green, of a fragrant Smell, and bitterish to the Taste. It bears oval Berries, which we shall describe by and by.

Johnson mentions another kind of Bay, which he says is more like a Shrub, sending forth from the Roots many Offsprings, which grow not so high as the common *Bay-Tree*, having the Bark of the Boughs somewhat red, and the Leaves somewhat tenderer : In other Respects much like the former.

Miller. It hath a Flower consisting of one Leaf, which is shaped like a Tunnel, and divided into four or five Segments; the male Flowers (which are produced on separate Trees from the Females) have eight *Stamina* which are branched into Arms: The Ovary of the Female Flowers becomes a Berry, inclosing a single Seed within a Horny Shell, which is covered with a Skin." This Author counts ten Species of the **Laurel-Tree**, which will be conveniently set down here.

1. *Laurus vulgaris*, C. B. the common Bay with Male Flowers. 2. *Laurus vulgaris fœmina*, Boerb. Ind. common Fruit-bearing Bay-Tree. 3. *Laurus vulgaris folio elegantissime variegato aureo*, Boerb. Ind. the gold-striped Bay-Tree. 4. *Laurus vulgaris folio undulato*, H. R. Par. the common Bay-Tree with waved Leaves and Male-Flowers. 5. *Laurus vulgaris folio undulato, fœmina*, Boerb. Ind. the Berry-bearing Bay-Tree with waved Leaves. 6. *Laurus tenuifolia*, Tab. Icon. Masf. the narrow-leaved Bay, with Male Flowers. 7. *Laurus tenuifolia fœmina*, Boerb. Ind. the narrow-leaved Berry-bearing Bay-Tree. 8. *Laurus latiori folio*, Lugd. Masf. the broad-leav'd Bay-Tree, with Male Flowers. 9. *Laurus latifolia fœmina*, Boerb. Ind. the broad-leaved Berry-bearing Bay-Tree. 10. *Laurus Indica*, Hort. Farnes. Ald. the broad-leav'd Indian Bay-Tree, commonly call'd wild Cinnamon.

The first and second sorts of these are old Inhabitants of the *English* Gardens; and as they are Varieties obtained from the said Seeds, so they are promiscuously cultivated,

cultivated, and are not to be distinguish'd asunder, until they have produced Flowers. It flowers in Spring, and the Seeds are ripe the *January* following, some say sooner.

MICROSCOPICAL *Description.*

The **Bay-Berries** (*Fig. 15. a.*) is a Fruit of an oval Shape, sticking to a short Stem not above a Quarter of an Inch long; the Surface is generally black, but some of them, whether thro' Age I cannot say, are crufted over with a dull Ash-coloured scurfy Matter, and sometimes with fine ragged Membranes. When the Husk is opened, it appears of a fine dark-brown Colour on the inner Surface, being a smooth thin Membrane that lines the Husk, and at the smaller End it suddenly grows yellowish, and looks like a brown Cup with a yellow Bottom.

The *Nucleus* easily comes out when the Husk is open'd, and as easily separates into two Parts or Lobes longitudinally; each of which is represented, *Fig. 15. b.* They lye in the Husk with the flat Surfaces together, each of which has a *Sinus* at the smaller End, shaped like the Sole of one's Shoe; one of these contains the little Piece which has the Rudiments of the Tree, adhering closely to its *Sinus*; the other is empty, and serves only to give Room to these Rudiments when the flat Surfaces of both Lobes are together: *c.* represents that little Piece, taken out and view'd by a larger Magnifier, and appears to be convex on the visible Side;

having in its Out-line much the same Form with the Cell or *Sinus* which contained it. It has a Ridge in a longitudinal Direction, is smaller at one End than the other, has Risings on the Sides, and is a most entertaining Object. The Smell of the Berries is aromatic and warm, the Taste very bitter.

V I R T U E S.

If the *Lauzel* was treated of here according to the high Opinion the Ancients had of it, the Account would amount to a Digression from our present Purpose; this much however we shall observe, that while the Ravages made by Thunder and Lightning, are destroying Towers and Palaces, Animals, and even other Parts of the vegetable World, wheresoever they exert their cruel Force, This Tree, according to the Opinion of the Ancients, stands untouch'd amidst the Ruins of every thing near it; it was even thought the House was safe that had but a Branch of this Tree in it; wherefore *Tiberius Cæsar*, who dreaded these Phænomena, whenever it began to thunder, had a Crown of *Lauzel* put upon his Head, as a Preservative against it. There was this Exception, however, among them, that it might be liable to the ruinous Attacks of Thunder and Lightning, only as a Forerunner or Presager of some great Prodigy. They also imagined, that if a Bough of the *Bay-Tree* was stuck up in Corn-Fields, it attracted to itself all the Malignity of the Air, which occasions Blights or other Rottenness to the Corn, and thereby preserved

TAB. V.



TAB. V.

plotted

preserved the whole Field. *Matthiolus* says, that the **Bay-Tree** has a Power of producing Fire from itself, by rubbing one dry'd Piece of it upon another, over some Powder of *Sulphur*, whereby sparks of Fire immediately fly off from it. Whether this Effect would not be produced by a sufficient Friction of any two Pieces of dry'd Wood together, is now no Question ; and therefore to attribute it to the **Bay-Tree** alone, seems something superstitious, and it is not unlikely, that some of those Opinions held by the Ancients were so too.

The **Bay-Berries** are held to be attenuating, warming, and discussive ; and are therefore used to promote Urine and the Menfes, to ease Colic Pains, and to help a bad Digestion. In external use, the Leaves are said to be of service in curing the Stings of Wasps or other venomous Insects, and in *Cataplasms* to soften Tumours. The Leaves dry'd and reduced to Powder, as much as will cover an Half-Crown, being drank in a Glass of white Wine, are said seldom to fail of curing *Agues*.

T A B. VI. Fig. 1, 2.

Diamond Ficoides, or ICE-PLANT.

THIS Plant is called *Ficoides* of *Ficus*, a Fig, because the Fruit in some Measure resembles a Fig. It is sometimes called *Aizoides*, from *αἰζών*, or *αἰσσοῦν*, *semper vivens*, because it is an Evergreen ; therefore

fore some Botanists call it *Sedum*, **Houseleek**, being in many Respects like it.

SYNONYMA.

Ficoides afra, fruticosa, caule lanugine argentea ornato; folio tereti; parvo, longo, guttulis argenteis quasi scabro; flore violaceo. *Boerb. Ind. Par. 1.*

CHARACTER of Plant and Flower.

Miller counts forty-one Species of the *Ficoides*, other Botanists mention many more; amongst which there are but two Species that have the Appearance of Silver Drops; this which we now describe, and the *Ficoides Africana folio plantaginis undulato, micis Argenteis adperso*, *Tourn. Ac. Reg. African Ficoides* with a waved Plantane Leaf, cover'd with Silver Drops.

The general Character of the *Genus* of this Plant from *Miller*, is, "The whole Plant is succulent, and has the Appearance of **Houseleek**; the Leaves grow opposite by Pairs; the Cup of the Flower is fleshy, and divided into five Parts almost to the Bottom; the Flower consists of many Leaves, which are divided into small Parts, and do expand in form of a **Marygold**; the Flower is succeeded by a succulent Fruit, which is divided into five or more Cells, which are full of small Seeds."

Boerhaave's Account is, "The whole Plant is succulent, like the *Sedum*, the Leaves conjugated; the *Calix* fleshy, five-leav'd or pentaphylloide, from the highest Compass of the *Ovarium*. The Flower polypetalous,

petalous, minutely divided, and rising from the Top of the *Capsula*. The *Ovarium* emitting five reflexed Tubes, becomes first a succulent Fruit, then spongy, divided into five or more *Loculi* full of very minute Seeds."

Boerhaave makes three Divisions of the *Ficoides*, those with triangular Leaves, those with long round Leaves, among which he counts this kind, and those with smooth Leaves; he mentions two Particulars regarding these which will be worth mentioning here: that sometimes they are liable to perish as if by some Disease, which he says does not arise from either Dryth, Heat, nor a rainy Season, and when once decay'd cannot be restored; and that some of them expand themselves at Sun-rise, and close at Sun-set; and others on the contrary open themselves by Night, and are shut up by Day.

Because these Descriptions mentioned, are the general Descriptions of the whole Class of the Species of this Plant, and because so general a Character cannot but admit of Exceptions, when we come to describe any particular one of them, and also as the *Diamond Ficoides* is a very curious Plant, I have taken the Opportunity of examining one of these in Flower and in a very flourishing Condition, since I do not find this Species particularly described any where else.

The Stalk is about four Inches high from the Earth, as thick as one's Finger at bottom, taper'd upward, and terminating in a single Flower.

Ten Branches shoot out by Pairs, opposite to each other; and each Pair at right Angles with the Pair above it.

The

The lowermost Pair are inconsiderable, and smaller or slenderer than those above them ; the next are the largest of all, most extensive, and thickest in the Stem ; the others growing less gradually to the very last Pair. They shoot out in a horizontal Direction, and the Tops of the second Pair from the Ground, are extended along the Earth, about a Yard asunder.

The Distances of the Branches from each other is unequal, being closer together at the Bottom, and farther asunder upwards.

The Stems of the Branches are bare, that is, without Leaves or any Division of Branches, for several Inches from the main Stalk ; and then divide and subdivide into many heavy Branches. The subdivided Branches are, at their going off, nearly as thick as those from whence they arise ; so that it is difficult to distinguish which is the main Branch of the two, if the Leaves out of whose *Alæ* they shoot did not shew it. These Leaves on the thicker Parts wither away as the Branches grow more considerable, and so continue gradually to decay upward successively to the very Tops, where alone they remain green and intire. It flowers in *August*, and the Seeds are ripe towards *Winter*.

MICROSCOPICAL Description.

The beautiful Appearance of the Silver Drops of this Plant made me examine the Surface of it, and the Flower, with my Microscope, as well as the Seeds of one

last Year's Plants, of which I have now a Specimen by me.

The whole Stalks, Leaves, and *Calix* are covered with these little glassy Globules, which are called Diamond or silver Drops, and which are rather like *Ice* than either. They are transparent, in as much as opposite Windows of Houses appear through them, and the green Stalk makes those between it and the Microscope look green. Those upon the Stalks are *Spheroids*, but those on the Leaves and *Calix* are globular. They seem like so many transparent Stones set into a Case, like those of a Ring; others are more prominent. Upon breaking them, they appear to be little membranous Bladders, very clear, and filled with an aqueous Liquor, which seems to have a weak saline Taste, but no Smell; and when they begin to wither and the Juice to exhale, these Membranes appear flaccid and collapsed.

Fig. 1. shews a Flower of its natural Size, with a Bit of its Stalk and a Leaf; the Leaf has its Apex bent towards one Side, is fat or thick, and has in its *Sinus* the Bud of another. The Seed-vessel is also fleshy, and the *Calix* has but three Leaves, which is an Exception to the general Rule mentioned above, each of which has its Apex in the Center, or nearly so, differing from those of the Stalk. The Flower is indeed polypetalous, having an infinite Number of narrow little Leaves crowded together, of a whitish faint Purple, in some Parts nearly white, but very inconsiderable.

F f

Fig.

Fig. 2. is the Seed, which is enlarged microscopically, having a streaky Surface, and being of a triangular Form. At one Angle there is a Dent or *Rictus*, the End of which is the *Umbilicus* of the Seed. It is of a yellowish brown Colour, is very minute in its natural Size, which is seen in those little Specks near it, and has neither Smell nor Taste.

V I R T U E S.

Boerhaave says, the *Ficoides* in general, are of the same Nature and Use with the *Houfeleek*, emollient and cooling; he also says, they are eatable, being commonly eaten by the *Hottentots*.

T A B. VI. Fig. 3. *a.*

Indian, or Black MYROBALANES.

MYROBALANUS, so called of *Μύρον*, *unguentum*, Ointment, and *Βάλανος*, a *Nut*. This Name seems to have been given to these Fruits erroneously, by the Translators of *Avicenna* and *Serapio*, who according to *Garcias* should have translated them *Pruna*, to which Fruits they have a great Likeness, rather than *Myrobalanes*, which have no Relation at all to an *Alcorn* or *Nut*. It is this Author's Opinion, that neither *Dioscorides*, *Galen*, nor *Pliny* had any Notion of these Fruits; and indeed it is very probable, for what *Dioscorides*

rides describes is his Βάλανος μυρεψική, *Glans unguentaria*, the sweet Ointment Nut; from which an Oil used to be pressed (as from Almonds) to mix with precious Ointments. The Qualities of our present *Myrobalanes* will appear, by and by, to be quite different, especially as the *Glans unguentaria* promotes vomiting, according to *Dioscorides*, whereas these are good to stop it.

We reckon five kinds of *Myrobalanes* in our Shops, which are comprehended in the following Distich :

Myrobalanorum species sunt quinque bonorum ;

Citrinus, Chebulus, Bellericus, Emblicus, Indus.

Some *Arabians* thought there were but four kinds of *Myrobalanes* ; the *Citrinus* and *Chebulus*, they made one, with this Difference, that the former was the unripe, the latter the ripe Fruit. *Cordus* says, more modern *Arabians* know but three kinds: 1. the *Indian*, *Chebulus*, and *Citrinus*, which, they thought, grew on one Tree ; 2. the *Belleric*, and 3. the *Emblic* ; others affirm'd they all grew on the same Tree ; but they will all appear to be different Fruits in the Prosecution of our Account of them. This is the Opinion of *Garcias*, whose Knowledge of these, and all other Exotics he mentions, appears to be the most certain ; he says, they not only grow upon different Trees, but also in Countries sixty or a hundred Leagues distant from each other : Some in *Goa* and *Gatecala* ; others in *Malabar* and *Dabul* ; four of the kinds are found all over the Kingdom of *Cambaia* ; but the *Chebula* in *Bisnagar*, *Decan*, *Guzarate*, and *Bengale*.

This Author says, he was informed by all the *Arabian* Physicians, that the general Name for every kind of *Myrobalane* was *Delegi*; but the particular for the yellow, *Azfar*; for the *Indian*, *Asuat*; for the *Chebula*, *Quebulgi*; for the *Belleric*, *Beleregi*; and for the *Emblie*, *Embelgi*. We shall give each a different Place under the Names specify'd in the *Distich*; and first of the *Indian* or *black Myrobalane*.

SYNONYMA.

Myrobalanus Inda nigra, Offic. Myrobalanus Indica, Ger.
1316. Emac. 1500 Ind. med. lxxii. Raii Hist. ii. 1531.
Park. Theat. 246. Myrobalani nigræ octangulares, C. B.
Pin. 445. Myrobalani Indici nigri, Mont. Exot. 9.
Myrobalani Indæ, nigræ, fine nucleis, J. B. i. 204. Chab.
13. Myrobalanifera salicis folio, Jonsf. Dendr. 82.

CHARACTER of the Tree.

The Tree which bears this Fruit is low, having Leaves like the Willow, to which it bears a great Resemblance in general.

MICROSCOPICAL Description.

This Fruit, *Fig. 3. a.* is said to be octangular by Authors, but they do not seem so to me, it may be on account of their coming to us dry; for they are shrivelled in an irregular Manner, and do not seem to have had that precise Form. It is elliptical, and smaller at the End to which the Stem was fixed, than at the other, of
 a black

a black Colour, and being cut by a transverse Section through the Middle, appears compact, black, and like Pitch; in substance uniform, and without any Sign of a *Nucleus*, and also brittle, shining when it is either broken or cut. It has an acid subastringent Taste, somewhat nauseous, and a Smell of the same Nature; this here described is about an Inch long, not half as thick. The Virtues of the five Sorts shall follow the Description of the last.

T A B. VI. Fig. 3, *b.* and 7 *

Bellerick MYROBALANES.

BELLERICUS, from the *Arabian* Name *Bele-regi*. The Savages call it *Gotni* and *Guti*.

SYNONYMA.

Myrobalanus Bellerica, *Offic. Ger.* 1316. *Emac.* 1500. *Park. Theat.* 247. *Ind. Med.* lxxix. *Raii Hist.* ii. 1532. *Mont. Exot.* 9. *Myrobalani rotundæ Bellericæ*, *C. B. Pin.* 445. *Myrobalani Bellericæ rotundiores*, *J. B.* i. *Myrobalani Bellericæ*, *Chab.* 9. *Myrobalanus laurifolio*, & *subcinericio*, *Jonsf. Dendr.* 84.

CHARACTER of the Tree.

This Fruit grows upon a small Tree, having Leaves like the *Laurel*, or *Bay-Tree*, but something slenderer and of a paler Colour inclining to an Ashy green, having a
Fruit

Fruit which is roundish, of the Size of large *Galls*, sometimes angular, including a Stone or *Nucleus* under a fleshy *Parenchyma*.

MICROSCOPICAL Description.

Fig. 3. b. shews an entire *Belleric-myrobalane*, which differs from the *Galls* (as to their Appearance only) in being a little depressed, and not quite round, as the *Gall* is. The Pedicle is pretty thick and strong, in proportion to the Size of the Fruit, as appears by the Figure; and at the other End there is an *Umbilicus*, as in all the Plumb-kinds, being the Place from which the Blossom withers off. As we cannot see these Fruits while in a soft State, before they are dry'd, we can have no Knowledge of their Colour or Substance in that State; but as they come to us hard and dry, we shall describe them as they appear. The outer Surface is wrinkled by Contraction (for no doubt they were plump and soft, like a Plumb, and much larger than they now are) and of a brownish Colour. Upon breaking the outer Substance, the Stone (*Fig. 7. **) appears, which is of a conical Figure, with four or five Ridges running, in a longitudinal Direction from the *Apex* to the *Basis*, of a yellow Colour, and its Surface something acid in taste. The inner Surface of the *Parenchyma*, which lay in contact with the Stone, is also yellow, and very rough, in little Lumps, which seem to have lodged among the little Asperities of the Stone. Between this and the outer Covering, the Substance consists of a *Meditullium*, or *Parenchyma*, which is

is black and pitchy, something analogous to that of the entire *Indian Myrobalane* already described, and has a subastringent acid Taste like that Fruit, and much the same Smell.

The Kernel or *Nucleus* (*Fig. 7. †.*) of this Stone, is of the same Shape with the Shell, which is very thick and strong ; it is yellow like the outer Surface of the Shell, and, being broken, has a foetid Smell and Taste, and looks internally of a dark yellow, like Bees-wax, being very unctuous and fat.

T A B. VI. Fig. 4. *a. b.*

Citron, or Yellow MYROBALANES.

THEIR Colour gives them this Character. It is also called *Aritichi*, and *Arare* by the common *Indians*.

SYNONYMA.

Myrobalanus, citrina, flava, Offic. Park. Theat. 206.
Myrobalanus, Ger. 1316. Emac. 1500. Raii Hist. ii.
1531. Ind. Med. lxxix. Mont. Exot. 9. Myrobalani
teretes, citrini, bilem purgantes, C. B. Pin. 445,
Myrobalani citrinæ, J. B. 205. Chab. 13. Myrobalani
forbi foliis, Jonsf. Dendr. 83.

CHARACTER of the Tree.

The Tree upon which this Fruit grows, is low, having a great Number of Boughs disposed in a very regular Manner, and set full of Leaves like those of the *Service Tree*. The Fruit is oblong, round, pentagonal, rugous, less than the *Chebulæ*, of a yellow Colour, and including under its *Parenchyma* a little angular Stone.

As to the particular pentagonal Shape mention'd to be proper to these, I am inclined to think such a Form fortuitous, that is, happening to shrivel in that Manner; because I have several, which in the *Rugæ* differ much from each other, there being no two precisely alike; and it is so, no doubt, in the drying of any Fruit whatsoever.

MICROSCOPICAL Description.

Fig. 4. a. shews the yellow *Myrobalane*, which differs from the rest in Colour, and from the next described, in Size being somewhat less, but much of its elliptical Shape; there is however this Difference, that this is small at both Ends, and swells about the Middle. The *Rugæ* are pretty thick upon the Surface, the Colour a dirty Oaker yellow. When the *Parenchyma* is broken, the Substance appears black and pitchy, like that already described in the former *Myrobalane*, is more acid than either of the before mentioned two, and, together with its Acidity, when chew'd, has much of the Flavour of *Rhubarb*.

Fig.

Fig. 4. b. is the Stone of this Fruit, of a different Shape and Appearance from the others, and has deeper Asperities; and, when broken, appears to be so thick as to contain a *Nucleus* extremely small, in comparison to the Size of the Shell, as at *c*, which has much the same Taste and Smell with the *Parenchyma* of the Fruit, and is oily like the last-described *Nucleus*.

T A B. VI. Fig. 5. 6.

Chebule MYROBALANES.

CHEBULUS, or *Chebula*, so called from the Arabian Name *Quebulgi*. The Indians call these *Aretca*.

SYNONYMA.

Myrobalanus chebula, *Offic. Ger.* 1316. *Emac.* 1500. *Park. Theat.* 206. *Raii Hist.* ii. 1531. *Mont. Exot.* 9. *Ind. Med.* lxxix. *Myrobalani maximi, oblongi, angulosi, pituitam purgantes*, *C. B. Pin.* 445. *Myrobalani chebulæ, citrinis fimiles, nigricantes*, *J. B. i.* 205. *Myrobalani chebuli*, *Chab.* 13. *Myrobalanifera persicæ folio*, *Jonsf. Dendr.* 83.

CHARACTER of the Tree.

This is the chief of the *Myrobalane-Trees*, and whose Fruit is largest and most considerable: It is a wild

G g

shrubby

shrubby Tree, not unlike that of the common Plumb; it has many Branches which grow thick together, whereon are Leaves like those of the *Peach-Tree*, according to *Garcias*, who affirms, that all the *Myrobalane-Trees* are like those of the *Plumb*, and grow wild in the Woods. But *Clusius*, in his Notes upon this Chapter of *Garcias*, says, the Leaves of this Tree are not like those of the *Peach-Tree*, but seem rather like those of the *Plumb* or *Cherry*; which he knew from a Specimen of the *Chebule-Tree*, brought to him by one *Johan. Posthius*, a German Physician.

MICROSCOPICAL Description.

Fig. 5. shews the *Chebule Myrobalane* intire, being black, and wrinkled upon the Surface like the rest, but having the *Rugæ* larger; this, as was observed before, is the largest Kind, and by its present Form, it is likely its natural Shape, when just ripe, or green, was like that of a Pear-Plumb. The Substance of the *Parenchyma* is not unlike that of the former kind, being gummy or pitchy in its Consistence, and its Taste is much more of the acid Bitter than that of the other kinds.

The Stone (*Fig. 6.*) is long, conical, and bears some Proportion to the Shape of the Fruit which incloses it, being of a yellowish Colour and full of Asperities.

The *Nucleus*, *a*, is but small in Proportion to the Size of the Shell, and consists of an oily Substance, which does not partake of the Taste of the Fruit, but is rather like an Almond; and from the Size of the *Nucleus* and that
of

of the Shell, it is easy to imagine the Strength of the latter.

T A B. VI. Fig. 7. a.

Emblick MYROBALANES.

EMBLICA, or *Emblicus*, from *Embelgi* the Arabian Name. Called also by the *Indians Amiale*.

SYNONYMA.

Myrobalanus emblica, *Offic. Ger.* 1316. *Emac.* 1500. *Park. Theat.* 247. *Mont. Exot.* 9. *Raii Hist.* ii. 1531. *Ind. Med.* lxxix. Myrobalanus, *Bont. mant. Arom.* iii. Myrobalanus emblica, foliis securidacæ, *Breyn. Prodr.* ii. 74. Nilicanaram, *Hort. Mal.* i. 69. Arbor Acaciæ foliis Malabarica, fructu rotundo, semine triangulo, *Syen. in Not.* Myrobalanus emblica, officinarum, *Comm. Flor. Mal.* 180. Myrobalani emblicæ, *C. B. Pin.* 445. *Chab.* 13. Myrobalani emblicæ in segmentes nucleum habentes, angulosæ, *J. B.* i. 206. Canna Indica arborea, *Zanon.* Myrobalanifera foliis minutim incisiss, *Jonsf. Dendr.* 83.

CHARACTER of the Tree.

The Tree, upon which this Fruit grows, is about the same Size with the former; having Leaves cut finely like Fern-Leaves, but thicker, and a Palm long.

MICROSCOPICAL *Description.*

The Fruit is round, black, hexangular, and including within its *Parenchyma*, a turgid little Stone, with six Sides, and remarkable for having six Cells also. The *Parenchyma* too is very particular in this, that when the Fruit grows ripe, it splits into six Parts, and has a very sharp Taste.

VIRTUES of all these MYROBALANES.

The *Indians* make use of the *Myrobalanes* as an Astringent, which *Garcias* does not approve of; and when they have a Mind to purge, they make a Decoction of them, and take a larger Dose than we venture upon here. They preserve them with Sugar, and in this Shape they prove a good Medicine; but those in most Esteem and most Efficacious are the *Chepulæ*, which are preserv'd in *Bisnager*, *Bengala* and *Cambaya*; and the yellow and *Indian Myrobalanes*, in *Batecala* and *Bengala*.

Garcias ordered a distilled Water to be made of these yet unripe, which he prescribed to wash down any astringent Conserve, and when the Case requir'd it, mixed it with Syrup. He also prescribed the yellow and helterick Kinds before Meat, to such as had a Looseness, or a Relaxation of the Stomach; because it render'd the Victuals subacid, and consequently subastringent. Besides, that Author says, he has found by Experience, that

that the Juice of unripe *Myrobalanes* is an exceeding efficacious Medicine for any Flux whatever.

They are all much used in the *Arabian Pharmacy*. *Sennertus* made great use of them in Diarrhœa's and Dysenteries, for some Astringency which attended their purgative Quality. They are now in some officinal Compositions, but not in extemporaneous Prescriptions. The chief use the *Indians* make of the *Embllick Myrobalanes* is to thicken and tann their Leather withal, and they also make it an Ingredient for making Ink.

T A B. VI. Fig. 8, 9, 10.

The ARECA NUT.

THIS Nut is also called *Faufel*, by the *Arabians*; by *Avicen*. *Filfel* and *Fufel*. In *Malabar* it is called vulgarly *Pac*, but *Areca* by the better sort of People; which Name the People of *Portugal* (who live in the *East-Indies*) retain. It is called by other Names also in different Places; as in *Guzarat* and *Decan*, it goes by the Name *Cupari*; in *Zeilan*, *Poaz*; in *Malaca*, *Pinan*; in *Cochin*, *Chacani*. Some with us call it the *Indian Malabar Nut*.

SYNONYMA.

Palma arecifera, *Ind. Med.* lxxxviii. *Palma cujus fructus sesilis faufel dicitur*, *C. B. Pin.* 510. *Palma arecifera*,

cifera, nucleo versicolori, nuci moschatæ simili, *Parad. Bat. Prod.* 361. *Pluk. Almag.* 275. *Phytog. Tab.* 309. f. 4. *Com. Flor. Mal.* 197. Palma faufelifera, *Jonsf. Dendr.* 151. Palma areca, five faufel dicta, *Hort. Beaum.* 32. Palma Indica minor, fructu areca dicta vulgaris, pawakghaha, *Herm. Mus. Zeil.* 51. Faufel, five areca, palmæ foliis, *J. B.* i. 389. *Chab.* 29. Nux faufel, five Pyriang, *Bont.* 90. Areca five faufel, avellana Indiana versicolor, *Park. Theat.* 1642. *Raii Hist.* ii. 1363. Areca, five faufel Indiæ orientalis, *Act. Philosoph. Lond.* Numb. 274. p. 930. Caunga, *Hort. Mal.* 1, 9. *Tab.* 5, 6, 7, 8.

CHARACTER of Tree and Flower.

Mr. *Samuel Brown* gives a short Account of this Tree in the *Transf. R. S.* Numb. 274. p. 939. He calls it *Pauk Maraum*, and in *English* Drunken Nutmeg, from its intoxicating Quality on such as are not accustomed to it. It rises sometimes forty Foot high, generally is six or seven Inches diameter. It seems to be jointed almost like a fishing Cane, which Joints are generally about four Inches distant from each other. The Leaves grow only at the Top, the Fruit on a Branch which grows out of the Tree near the Top.

This Account of so remarkable a Tree and Fruit, for its general use in the Eastern Parts of the World, is but very superficial; I shall therefore entertain the Reader in this Place, with one more particular and instructive from the *Hortus Malab.* Vol. I. IX. f. 5, 6, 7, 8. believing it may

may be as agreeable to him, as it is at present to myself, to know what is curious in Natural History.

“ The *Root* is long, black, and a Span thick, with
“ Branchings of a white and red Colour, which, within,
“ have woody Fibres, easily pulled asunder.

“ The *Trunk* is a Span thick, running taper upwards,
“ having a clear green *Cortex*.

“ The *Boughs* which come from the Stalk, emerge
“ two and two from each other, in a decussated Order;
“ embracing the Top of the Trunk like a Vagina, or
“ close, round Capsula. The outer surrounds the inner,
“ and, together, constitute that long Head of the Tree,
“ which is thicker than the lower Part of the Body of
“ the Trunk. The exterior Branches, after a certain
“ Time, break at the Foot, and drop off.

“ The Feet of the Boughs are a dark Green, white
“ on the inner Surface, of a coreaceous Contexture,
“ striated, and within that, consisting of woody Fila-
“ ments, cover'd with a white shining Membrane, which
“ is firm and thick; that part of the Bough, which rises
“ from the Foot, is broad below, and grows taper by
“ degrees. It is round or convex on the Outside all the
“ Way up, and hollow or concave on the inner Side,
“ and, towards the Top, ends in a sharp Rib; on each
“ Side of which a Lip or Border appears to enclose
“ it.

“ The *Leaves* are three or four Foot long, and about
“ four Inches broad, and are folded with three, four, or
“ five *Plicæ* like those of a Fan, and propagated from
“ those

“ those *Labia*, on the inner Side, just mentioned. The
 “ most imminent Parts of these Folds are set with Ribs
 “ of a clear green Colour, and within, striated with
 “ longitudinal Veins, of a rigid Contexture, and plain
 “ Surface. The Leaves are of a dark Green, and slimy
 “ on both Sides.

“ In the abovementioned Head are included *Capsulæ*,
 “ wherein the *Fasciæ* of the Boughs, the young Twigs,
 “ with the Flowers and Fruits are included. The
 “ *Fasciæ* of the Boughs and Twigs which are so includ-
 “ ed, consist of one plain Foot, and are placed round
 “ the Top of the Trunk, being endow'd in the thicker
 “ Boughs, with the tender Fruit; and in the tender
 “ Twigs which break out below the Place where the
 “ Fruits arise, are set round with the *Gemmæ* of the
 “ Flowers in two opposite Parts. These *Fasciæ* in the
 “ Boughs and Twigs are first White, or of a whitish
 “ Yellow, then Green, and, when older, of a dark
 “ Green, and something hard.

“ The Buds of the Flowers are turned towards the
 “ Tops of the Twigs, are small, white, and angular,
 “ open into three rigid, cuspidated, thick Leaves, and
 “ contain in their Middle nine slender *Stamina*, without
 “ any *Apices*; three are of a yellowish White, are longer,
 “ and surrounded by the six shorter ones, which are
 “ more Yellow.

“ The Fruit adheres to the *Fasciæ* of the Boughs,
 “ and is elliptical, and set round with a thick
 “ Rind; consisting, first, of a dark red Pulp, having a
 white

“ white *Medulla* within. They are white and shining,
 “ and when the Pulp first grows soft, have in the Middle
 “ a good deal of a clear Liquor, which has an astringent
 “ Taste. They are then called *Tanni-paina*; when it
 “ grows larger with that Pulp, and has no more of that
 “ clear Liquor, the Fruit is called *Scalemba-paina*;
 “ and when it is older and harder, and the white *Me-*
 “ *dulla* is confirmed in the Middle, it is called *Aria-*
 “ *Decca*: and when at the hardest, and the *Cortex* is of a
 “ yellow Colour, it is then called *Paleca*. At first
 this Pulp has an oval Form, then grows narrow and ob-
 long, and at last grows thicker and comes nearer to the
 Form of a Cone, which then, whether hard or soft, is
 eaten by the People with the *Betle* and Lime, mention-
 ed where we spoke of the *Betle*.

MICROSCOPICAL Description.

The *Areca Nut* grows in a Husk like the *Walnut*,
 or *Nutmeg*; and by the foregoing Account may be
 understood to grow, in its Progress, harder and harder
 like the *Walnut*, till the Husk splits to let the ripe
 harden'd Fruit fall out.

Fig. 8. is that hard Nut which we are now to describe.
 Its Surface is a dark Brown, striated promiscuously with
 a yellowish brown Colour; its Figure a Cone, and is
 capable of standing firmly on its Basis. In the Center
 of the *Basis* there is the Hole or Vestige of its Pedicle,
 or whatever other Thing stuck to it whilst invelliped in
 its Husk, round which the Bottom is whitish. Fig. 9.

is another Species of the *Areca Nut*, at least in Shape, being somewhat less, more squat, and having no Cone. I cannot say, whether these different-shaped ones might not be a Variation of the Fruit of the same Tree, as Apples or any other Fruits often are, but the Surfaces are not precisely alike in one Respect only (their Colour being the same) that is, the yellowish brown Lines upon the Surface of the latter, are thicker together, and sink deeper into the *Cortex* between the dark brown Parts (which are consequently made more imminent thereby) than those of the conical one.

Upon cutting one of these into two Parts, the Surface appears as at *Fig. 10*. On the outer Part, all round, the internal Substance appears radiated outward, being of a dark red and brown Colour, and in its Center inclosing a white Substance, which in many Places shoots itself out into the brown Substance, in little *Radii*, towards the *Cortex*. This is, probably, the dark red *Pulp* and white *Medulla* mentioned in the above Description of the *Hortus Malabaricus*. This Inside has, in general, something of the Appearance of a *Nutmeg* when broken or cut across, (but has no Share in that most fragrant Smell, proper only to that Fruit) with this Difference only, that the white in the *Nutmeg* is mixed pretty equally with the brown Colour; whereas in this, the white Matter, or *Medulla*, is collected in the Center.

V I R T U E S :

Its use with the *Betle* Leaf is mentioned sufficiently already, *Tab. V. Fig. 1. a.* where we spake of that Plant; and as to the other Medicinal Uses, they are spoken of as follows:

The above-cited Mr. *Brown* says, the Natives of *Perre Pollum* and *Eremita Pollum*, Places twelve or fourteen Miles from *Fort Saint George*, make no use of the Tree nor Leaves; but of the Root, Flowers, and Fruit boiled in Water, they make a pleasant Purge, giving three or four Ounces of it to an ordinary Person for a Dose; it purges the Body well, and expells Wind greatly.

Garcias held the distill'd Water of the green Fruit as a great Secret against bilious Fluxes, and boasts of its great Efficacy in those Cases: yet the above-mentioned Mr. *Brown* says, that where he lived, the Natives never used it for any such Intentions.

It is said of this Fruit, that if it be eaten before it is ripe, it stupifies the Senses, and renders Men drunk; and that when any *Indians* are in great Pain, or are to suffer Torture, they eat the unripe Fruit, in order to blunt and mitigate the Pain.

It will not be unseasonable to mention in this Place, that the *Terra Japonica* is supposed to be the inspissated Juice of the *Areca Nut*. There are, however, many Opinions and Differences among Authors concerning it; some take it for a kind of Earth, some for a Vitriolic

Composition, and others for the Extract of certain Vegetables. *Wedelius*, in the *Ephem. Ger. An. 2. Obs. 128.* enumerates all these Opinions, and many more, to which I refer the Reader, and shall only mention that *Paulus Ammannus* says, it is composed of the Extracts of *Indian Liquorise*, *Calamus Aromaticus*, and the Juice of the *Areca Nut*, which gives it the purple Colour. But *Johannes Otto Helbigius*, who had an extensive Knowledge of the Simples of the East, says, it is absolutely extracted from that little Fruit which is eaten with the *Betle* Leaf and *Lime* all over *India*. To this Opinion, *Dale* subscribes, and I find it was the Opinion of the late industrious Enquirer Doctor *Douglas* in his *Index Materiæ Medicæ*, who was generally well convinced of the Truth of any thing he was about to publish, before he exhibited it.

The great use made of this Fruit, gave Occasion to the following Lines :

- “ *Quis foliis credat commixta calce tenellis,*
- “ *Cum fructu hoc Indos vesci, unde ore cruento*
- “ *Purpureum ejiciunt succum, tam dentibus atris*
- “ *Horrendum arringunt, & dentibus ore minantur?*

T A B.

T A B. VI. Fig. 11, 12. *a, b, c.*

MYRTLE SEED.

THE Greek Name, according to *Dioscorides*, is *μυρσίνη*, *Myrrh*, whence some Authors derive the Latin Name *Myrtus*, because this Tree smells like it; but it may be derived of *μύρον*, *unguentum*, from the Fragrance of the Ointments of the Ancients.

SYNONYMA.

Myrtus, *Offic. Chab.* 39. *Myrtus Bætica sylvestris*, *Ger. Emac.* 1412. *Park. Theat.* 1454. *Myrtus communis Italica*, *C. B. Pin.* 468. *Raii Hist.* ii. 1502. *Tourn. Inst.* 640. *Boerb. Ind. A.* ii. 255. *Jonsf. Dendr.* 240. *Myrtus vulgaris nigra & alba, sativa, & sylvestris*, *J. B.* 510.

CHARACTER of Tree and Flower.

Boerhaave gives it these Characters: The Stalk is full of Branches, flexible, and has Leaves like those of the *Buxus*, but somewhat less, more acute, smooth and shining, having a grateful Smell.

The Flowers grow from the *Alæ* of the Leaves, each Flower having five Leaves ending in an *Umbel*, which are white, sweet smelling, and containing a *Calix*, which afterwards becomes an oval Berry, having a *Corona* at the Top. This Berry is green; but when ripe, black, succulent,

succulent, and smooth; having hard, compact, white Seeds of an astringent Taste. This Shrub grows in warm Regions.

Johnson says, the Branches are small and brittle, the Leaves of a middle Size, sharp-pointed, standing by Couples in two Rows, seldom in four, as in other kinds; they are blackish and smell sweet; the Flower is like those of the other Species of *Myrtle*; the Fruit is round, growing upon long Stalks, out of the Bosoms of the Leaves, first green, then whitish, lastly black, of a pleasant Taste, with some Astringtion. It grows wild in divers Places of *Portugal*, where *Clusius* found it flowering in *October*. This Author calls it from *Clusius*, *Myrtus Bætica sylvestris*.

Tournefort's Character is, that the Flower is rosaceous, having its *Petals* placed in an orbicular Order, whose *Calix* becomes an Olive-shaped Berry, which is crown'd at the Top, and filled with reni-form'd Seeds in three Cells. This agrees with Mr. *Miller's* Description, who counts fourteen Species of this Tree, which he has seen growing in the Gardens of the Curious near *London*; it will be convenient to bring their Names under the Reader's Eye, in this Place, for his Instruction:

1. *Myrtus communis Italica*, C. B. Common Myrtle with pretty large Leaves.
2. *Myrtus latifolia Romana*, C. B. Common broad-leaved Myrtle.

3. *Myrtus minor vulgaris*, C. B. Thyme-leaved Myrtle, vulgo.
4. *Myrtus folio Buxi*, Boerb. Ind. Box-leaved Myrtle.
5. *Myrtus foliis minimis & mucronatis*, C. B. Rosemary-leaved Myrtle, vulgo.
6. *Myrtus flore pleno*. Double flowering Myrtle, vulgo.
7. *Myrtus foliis odore nucis moschatae, cauliculis rubentibus*, vulgo odore citri, Schuyl. Boerb. Ind. The Nutmeg Myrtle, vulgo.
8. *Myrtus Bætica angustifolia*, Clus. Narrow-leaved Spanish Myrtle, commonly called the upright Myrtle.
9. *Myrtus Balsamica, foliis mali granatae*, H. L. The Pomegranate-leav'd Myrtle.
10. *Myrtus latifolia Bætica secunda, vel foliis laurinis confertim nascentibus*, C. B. The Orange-leaved Myrtle, vulgo.
11. *Myrtus minor, foliis ex albo variegatis*. The strip'd Thyme-leav'd Myrtle.
12. *Myrtus foliis odore nucis moschatae, cauliculis rubentibus, foliis ex luteo variegatis*. The striped Nutmeg-Myrtle, vulgo.
13. *Myrtus foliis mucronatis, ex albo & viridi variegatis, flosculis rubro candidis*, Boerb. Ind. The strip'd Thyme-leaved Myrtle, vulgo.
14. *Myrtus latifolia Romana, foliis ex luteo variegatis*. The broad-leaved Myrtle, with strip'd Leaves.

MICROSCOPICAL Description.

Fig. 11. a. shews a *Myrtle Berry* of its natural Size, with its *Pedicle*, which is slender, and its pentagonal *Corona*; *b.* is the same, as view'd with the Microscope, wherein every Feature appears perfect and plain.

The *Pedicle* is slender, the *Body* oval, black, and somewhat rough, and consists of a thin shelly *Cortex*, very brittle, and having, through Ripeness and Siccity, lost all that Succulency mentioned by *Boerhaave*. This thin *Cortex* is as full of Seeds as it can hold, being so disposed together, that their concave Sides, or *Umbilici*, turn inward to the Middle, and are kept together by a membranous Substance, as the Intestines are by the *Mesentery*; by which Position their round Backs, or convex Sides, are all outward, and, when the *Cortex* is carefully taken off, they all stick together like an uniform oval Body.

The *Corona* at the Top has five Sides, nearly equal, from each of which a little leafy Membrane turns inward towards its Center. It has a little Process in the Middle, which is surrounded by a rough Rising, and makes an entertaining Subject.

Each Seed has a convex and a flat Side, and is, as some Botanists have termed it, in some measure reniform; but seems to have a greater Resemblance to a human Ear. *Fig. 12. a.* shews the convex Side of one of the Seeds as it appears in the Microscope.

It is exactly like polish'd Ivory on its Surface, and of the same Colour ; so compact as not to appear porous, but with a Glass that magnifies considerably ; and having on one Side a *Sinus*, which runs out into a Notch, something similar to the Opening of the *Ear*. This is full of a dark, porous, spongy Substance, which is yet more apparent on the flat Side, *b*. This Side appears, in its Outline, of the same Shape with the convex Side, and has a round Process of the same Substance, which is terminated by the Edge of its Ivory Covering. This is the *Umbilicus* of the Seed, and the round Process of that spongy Substance is a Continuation of the same in a tubular *Sinus*, which is represented at *c*. Upon making a transverse Section of one of the Seeds, I observed a Hole in each Part ; and in order to find its Direction, I made a longitudinal Section which discovered the *Sinus*, as it appears at *c*, filled with the Substance mentioned, which, no doubt, contains the Rudiments of another Shrub like the Parent. The natural Size of the Seed appears below, *c* ; however they are not all of a Size, nor a certain Number contained in every Berry ; for I have observed in a large one, not more than four large Seeds, and in a smaller, ten or twelve small ones, so that their Number is uncertain. The Seeds, when chew'd, have an austere, acid Taste, and a Smell of the same Nature ; but the Berries, when rub'd between the Fingers, have a fragrant Smell, which is very agreeable.

V I R T U E S.

There is a Syrup in the College Dispensatory under the Title of *Syrupus Myrtinus*, Syrup of *Myrtles*, which is a restringent Syrup, and altho' much neglected, is an excellent Medicine in all Cases which require a restringent Regimen. They are also a very proper Ingredient in the *Emplastrum ad Herniam*, *Rupture-Plaster*; and are in every other Preparation of the Leaves or Seeds calculated, and are indeed efficacious, for the same Purposes.

Boerhaave says, they have the same Virtues with the *Caryophyllata*, *Avens*, if the fresh Leaves be infused like *Thea*. The Leaves and Berries are good in all Fluxes, the *Fluor Albus* or *Profluvium Mensium*, in *Diarrhæa's* and other *Hemorrhages*. The Leaves boil'd and apply'd by Way of Cataplasm, are good to strengthen weak Joints; the Decoction of the Leaves and Berries in Wine are good to hinder Hair from falling, and by some Authors are said to turn the Hair black, and cure Scabs in the Head. In short, they are good Strengtheners, Restringents, and Refrigeraters in general.

T A B.

T A B. VI. Fig. 13.

JUNIPER BERRIES.

THE Greek Name is *Ἀρνειθὶς*, the Latin *Juniperus*; the former seems to be derived of *Ἀρνέω*, *Auxilior*, *opitulator*, to help, because it is efficacious in helping People under several Diseases; *Soph.* or, according to *Plato*, *Sufficio*, *Par sum*, *Satisfacio*, to be sufficient for expelling Diseases, or, of *Ἀρνίος*, *vim propulsandi habens*, *utilis*, *adjuvans*, having a propelling Force, or to be beneficial and assisting; because of the high Opinion the *Juniper* had gained among the Learned for its Virtues. The Latin Word is said to be derived of *Gigno*, to beget, ingender, cherish, and the Greek Word *πῦρ*, Fire, *Gigni Pyros*; because burning Coals of this Tree, if cover'd with Ashes, are said to cherish their Fire for a Year together: *Boerhaave* says, the Name *Juniperus* comes from *Junior*, Younger, and *Pario* to bring forth, because the Tree brings forth young Berries, whilst others are ripening.

SYNONYMA.

Juniperus, *Offic. Ger.* 1189. *Emac.* 1372. *Merc. Bot.* i. 45. *Phyt. Brit.* 64. *Mer. Pin.* 67. *Juniperus vulgaris*, *Park. Theat.* 1028. *Jons. Dendr.* 278. *Chab.* 72. *Juniperus vulgaris fruticosa*, *C. B. Pin.* 488. *Tourn.*

Inst. 388. *Boerb. Ind.* A. ii. 108. *Dill. Cat.* Giff. 59.
Rup. Flor. Jen. 271. *Juniperus vulgaris* baccis parvis
 purpureis, *J. B.* i. 293. *Raii Hist.* ii. 1411. *Synop.*
 iii. 444. *Buxb.* 172.

CHARACTER of the Tree.

The **common Juniper Tree**, according to *Johnson*, grows in some Parts of *Kent*, as large as a considerable Tree, but it most commonly grows as low as our Ground Firs. It has a thin Bark, which, in hot Regions, will crack and divide in several Places; out of which Rifts, a Gum issues, much like *Frankincense*. The Leaves are very small, narrow, hard, and something prickly, ever green, set thick along the Branches, among which round small Berries grow, at first green, afterwards black, of a blueish Cast, and of a sweet Smell and Taste.

Miller's Character is: "The Leaves are long, narrow, and prickly; the male Flowers are in some Species produced at remote Distances from the Fruit on the same Tree; but in other Species, they are produced on different Trees from the Fruit: The Fruit is a soft pulpy Berry, containing three Seeds in each."

Tournefort mentions five Species of the **Juniper-Tree**, and *Mr. Miller* six: those of the Latter are,

1. The *Juniperus vulgaris fruticosa*, C. B. The common *English Juniper*.
2. *Juniperus vulgaris arbor*, C. B. The Tree, or *Swedish Juniper*.

3. *Juniperus Virginiana*, H. L. *Folio ubique juniperino*, Boerb. Ind. The Cedar of Virginia.
4. *Juniperus Virginiana*, *foliis inferioribus juniperinis*, *superioribus sabinam*, *vel cypressum referentibus*, Boerb. Ind. Red Virginian Cedar.
5. *Juniperus Virginiana baccis albis*. The white berry'd Virginian Cedar.
6. *Juniperus Bermudiana*, H. L. The Cedar of Bermudas.

The *Juniperus maxima*, of Johnson, grows to the Height of a Cypress, and has a larger and harder Leaf, with a Fruit as big as an Olive, of a fine blue Colour and sweet Taste. This Author describes another, which he calls *Juniperus Alpina minor*, the small Juniper of the Alps, which, he says, exceeds not the Height of a Cubit, and creeps upon the Ground; having several thicker and shorter Branches than the common Kind, tough, also writhed and hard to break, three Leaves growing always at equal Distances, as in the common, yet broader, shorter and thicker, nor less pricking than they; of a whitish Green Colour on the Inside, and green without. The Fruit is like that of the common, but a little longer; it grows upon the Alps, and the Fruit is ripe in August and September.

MICROSCOPICAL Description.

Fig. 13. a. is a Juniper-Berry magnify'd, to shew its Marks the more plainly. This Fruit is quite round, of a black Colour, which, although it appears smooth, yet

yet the Covering appears porous, and resembles the Surface of Shagreen in some Measure. At the Top, it has a triangular *Sulcus*, which is not very deep, and in some it is superficial. At the other Extremity the Stem appears, which is rough near the Place of its Infertion, with a scaly Covering for a little Space. *b*, is a transverse Section of a *Juniper-Berry*, which shews the Thickness of the pulpy Substance of the Fruit, which appears every where interspersed and mixed with a great Quantity of fine yellow *Gum*, that in many Places is in Lumps, especially about the *Officula* or Stones of the Fruit. This *Parenchyma* incloses three of these *Officula*, lying in close Contact together by their flatter Sides, and with their *Apices* meeting at the Top. *c*. is the Fruit of its natural Size, some Grains may be a little bigger, some a little less.

Fig. 14. a. is the convex Side of one of the Stones, having from the Apex, three or four Ridges, which render it triangular at the Top, and are lost towards the Basis, of an irregular form, long, narrow, and shining, after being cleansed of the Pulp that covers them with the *Gummy* Matter just mention'd ; but when dry, has an Appearance like that of the Stones of other Fruit. *b* shews a longitudinal Section of one of them, which brings to view a *Nucleus* in all Respects like that of a *Plumb-Stone*, being cloth'd with a Membrane, and having a succulent *Parenchyma*. *c* is the Stone in its natural Size. The Taste of the *Juniper-Berry* is sweet at first chewing, and leaves a kind of agreeable Bitterness behind

behind ; the Sweetness is in the gummy Pulp, but the Bitterness remains from the *Nuclei* of the Stones.

VIRTUES.

The Tree, its Gum, and the Berries are in use, nor is there any Simple that has engrossed more of the Esteem of medical Practitioners of all Ages than the present Subject, of which many Examples are to be found among Authors.

The Gum which flows from the *Juniper-Tree* is by the *Arabians* called *Sandaracha*, which is a resinous dry Substance, of a pale Yellow, concreted into Drops, and having a resinous Taste. *Fred. Hoffman* says, this Gum is of Service in paralytic Disorders, Contractions, or Spasms. It may not be amiss here to inform the Reader, by way of Caution, that what the *Greeks* call *Sandaracha*, is a kind of *Orpiment*, which being of the same Name, a rank Poison might be mistaken for a most wholesome Gum. The Character *Dioscorides* gives of it is as follows : “ *Sandaracha probatur rufa, & saturator,*
“ *& aliena materia vacans, friabilis, cinnabaris colore,*
“ *sulphuris virus redolens, dos eadem & ustio, quæ*
“ *auripigmento.*” This answers to what is sold for the red Orpiment, or *Sandarach*.

All the Parts of the *Juniper-Tree* are of a Balsamic Nature, but they are chiefly used at present as Detergers of the *Viscera*, and Diuretics ; wherefore they are often prescribed in Compositions for the *Jaundice*, *Dropsy*, *Moist Habits* of Body, and Difficulty of Urine. Decoc-
tions

tions, Infusions, and the distill'd Spirit are all convenient Forms for retaining the Virtues of the *Berries*, which are also exceedingly wholesome to eat alone a Handful or two every Day. They are thought by some to strengthen the Stomach, and to be good against epidemical Infections, and are from their Balsamic Nature good in Diseases of the Lungs. They afford a considerable Quantity of Oil by Distillation, which *Quincy* says, does not differ much in Smell and Virtue from Oil of Turpentine.

It would be tedious to enumerate all the Preparations of this Tree and its Fruit, that are to be found amongst Authors; a few will however be as well useful as curious, in order to shew how serviceable they were thought, for the Cure of the Diseases for which they were calculated.

There was an Oil made by Distillation of the **Berries**: There was also an Oil made from the Wood, which was for external Application, in nervous Complaints, and Swellings and Pains of the Joints.

A Salt was made from its Ashes, as well as from those of the **Berries**, which was said to cure Dropsies by promoting Urine.

The *Germans* held a *Rob* made of the Fruit boiled and inspissated in such great Esteem, that it was called *Theriaca Germanorum*, from the good Effects they thought it produced in expelling Poison, and preserving against Infection.

There

There was a gummy Extract made of the Wood and Bark; and an Extract from the dry'd Berries with Spirit of Wine; both these were esteemed as excellent Sudorifics, and very prevailing against *Pestilence* and any Infection, and also in curing *Epilepsies*.

I find an *Elixir Juniperinum*, so much commended in calculous Complaints in the *Messis Medico-Spagyrica*, page 430. that I cannot but think it incumbent on me to insert it in this Place.

“ Take of ripe chosen *Juniper-Berries*, any convenient
 “ Quantity, pound them grossly, and let them digest in
 “ Infusion in any diuretic Water for some Days. Squeeze
 “ out the Liquor, and inspissate it to the Consistence of
 “ Honey. Then take ten or a dozen Spoonfuls of
 “ this Extract, and infuse it in *Juniper Brandy*, digest
 “ them some time in a very gentle Heat, and the *Elixir*
 “ is made; which retains all the Virtues of the Tree and
 “ Fruit, is said to have done Wonders in fabulous
 “ Complaints of the Bladder and Kidneys, and in Weak-
 “ nesses of the Stomach.

There is another contrived by *Fred. Hoffman* for the same Purposes, which being short, may have a Place here without exceeding our limited Brevity.

“ Take of the *Rob* of *Juniper-Berries* any quantity;
 “ Spirit of the Berries made by Fermentation, a suffici-
 “ ent Quantity, and half as much Malmsey Wine; di-
 “ gest them some Days in a gentle Heat, and the Elixir is
 “ made, efficacious to a Wonder in the above Complaints.

Here is a Recital of many Excellencies abounding in these **Berries**, and of Commendations of Authors which they no doubt deserve ; yet as, by the Depravity of Men's Minds and Manners, the best Things are sometimes render'd subservient to the worst Uses, we find this noble serviceable Fruit is become a Part of the habitual *Bane* of the Populace, and consequently an infinite Detriment to the Commonwealth : this is notorious by the many Diseases brought on the Poor, who daily fill our *Work-Houses*, by the inordinate drinking of **Gin**, a Liquor supposed to be distilled from these **Berries** ; and who might, in some Shape, be otherwise useful Members of the several Societies in the Roads of Life to which they are called. The *Gum Sandarach* is a frequent Ingredient in Vernishes, and the Berries often used in Diet-Drinks.

TAB. VI. Fig. 15. 16.

The **INDIAN BERRY.**

THIS Fruit was called by the general Name, *Cocculus Indicus*, as if there were no other Berries from the *Indies* but these. They were also called *Cocci Orientales*, a Name also too general. *Cordus* thought they were the Fruit of the *Solanum Furiosum*, and others, the
Fruit

Fruit of a *Tithymal*. But the *Indian* Names by which they are known in different Places, are these: The *Bramannes* call them *Gazundo-Pala*, the *Portuguese*, *Fruita matta Peire*; and the *Hortus Malabaricus*, *Natsjatam*; and in other Places by the *Flemins Waterquaad*.

SYNONYMA.

Cocculus Indus, *Offic. Park. Theat.* 1582. *Cocculus officinarum*, *Jonsf. Dendr.* 156. *Cocculus*, *Ind. Med.* xxxviii. *Cocculæ officinarum*, *C. B. Pin.* 511. *Mont. Exot.* 11. *Pluk. mant.* 52. *Cocci orientales*, *cocculus Indi*, *Ger.* 1365. *Emac.* 1548. *J. B.* i. 348 *Raii Hist.* ii. 1812. *Chab.* 26. *Natsjatam*, *Hort. Mal.* vii. 1. *Tab.* 1. *Arbor Indica cocculos officinarum ferens*, *Breyn. Prod.* ii. 19. *Commel. flor. Mal.* 24. *Solanum racemosum Indicum arborescens*, *cocculos Indos ferens*, *Raii Dendr.* 115.

CHARACTER of the Tree and Flower.

The *Cocculus Indus* is the Berry of a shrubby Tree, whose Leaves grow on short green Twigs, in the Shape of a Heart, with a smooth Surface, and of a hard Contexture; on the fore Part of a dusky Green, on the other Side of a more light or diluted Colour, and a bitterish Taste.

The Flowers spring from long, green Branches, which grow here and there on the thicker Boughs, and are fixed to short white Pedicles; they are Monopetalous, divided into five Parts, white, reflected outward, and having

yellow *Apices*, and a Smell not unlike that of Elder. The *Gemmæ* are round and green. The Fruit grows pretty thick together, upon strong little Stalks, hanging from Branches about a Cubit long, of a whitish Green, and like Grapes in Form: they are first white, afterwards they grow red, and when ripe, blackish. The Tree grows in sandy Places, in *Warapoly*, *Ange-caimali*, and other Places, and are Ever-greens.

MICROSCOPICAL Description.

Fig. 15. a. is a Side-view of the *Cocculus Indicus*, enlarged by the Microscope from its natural Size, *b.* It appears to be oval, having on one Side a kind of Notch or Depression, which reduces its oval Form, in some measure, to that of a Kidney; at the upper Part of which a little Angle projects, and below which the Stem of the Berry adheres. There is one Remark to be made of this Berry, that the Stems of all the Fruits and Berries I can call to mind at present, are fixed to a central Spot, whether at the End or any other Place, whereas this has its Stem, as was just said, below the Notch on one Side of the End, which gives it a different Look from all others, and much resembles an *Ureter* passing downwards out of a Kidney. On the convex Back of this Berry, there is a Ridge which seems to divide it into two equal Parts longitudinally, and appears to the naked Eye, but is very conspicuous by the Microscope. The Body is of a dark muddy Colour, and so is the Stem.

Fig.

Fig. 16. a. is a transverse Section of a Berry, through the Notch, dividing it exactly into two equal Parts, in which there appear two cortical Substances enclosing the *Nucleus*; the outer is very thin, rough, and of a dark Colour quite through, but the next is of a light Colour, and of a spongy Contexture, running round the *Nucleus* till it comes to the Center at the Top, which is the divided Place of the *Notch*, or *Umbilicus* of the Berry; it doubles down again on each Side, forming two round Bottoms, and meeting in an Angle upward again, unite into a Partition, and run to the outer Edge or Belly of the Berry, widening as they approach the outer *Cortex*. By this Means two Cells are form'd, (wherein I found nothing, although I had cut ten or a dozen) and the *Nucleus*, which otherwise would be oval, like its Coverings, is semilunar in this transverse Section; but if this whole Case of Cells was taken out, and the *Nucleus* left entire, then it would have a great Hole in its Center and be like a Cup. *b.* is a lateral longitudinal Section dividing the Back and Belly assunder, by which Means the Bottoms of the Cells are seen, as they are divided by their Partition mentioned before.

The *Parenchyma* of the *Nucleus* is oily, of a greyish Colour, and bitterish to the Taste, with a nauseous Smell, and the Berry is naturally no bigger than a Bay-Berry.

VIRTUES.

This Berry is of a deleterious Quality, therefore dangerous to take internally. It is chiefly used for destroying Lice that infest Children. The Manner of using it, is to reduce the Berries to a Powder, and strew it among the Hair on their Heads, wearing a Cap closely pin'd on. Their Cloaths must have the Powder scatter'd also upon the Places where any Signs of the Vermin appear. It is more certain and efficacious in killing any kinds of Lice, than the *Staves-Acre*.

Riverius has a Cataplasm composed of these Berries and *Myrrh*, equal Parts, powder'd and mixed with Vinegar to a proper Consistence, which he applyed to Gouty Parts to ease the Pain.

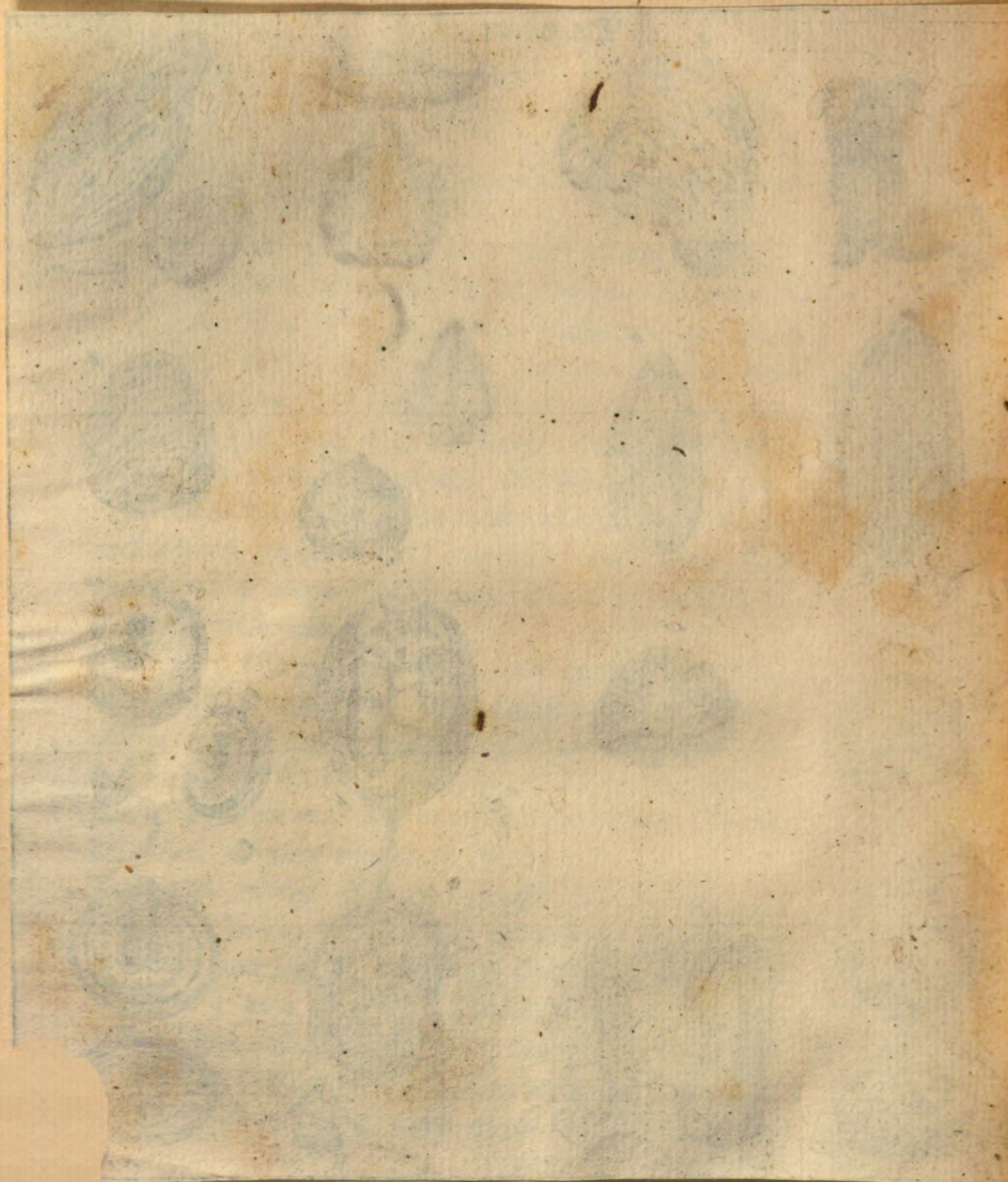
Another Use made of these, is to catch Fish withal, for which Purpose they are reduced to several Forms, and are said to allure Fish to take them by some Specific Virtue in them, and then intoxicate the Fish so much, as to prevent their attempting to escape. It will be curious to insert two or three here :

Take Oyl of the *Aspredo*, *Cocculæ Indicæ*, and *Assa Fœtida*, beaten together into a fine Paste : add some Honey and Oyl of *Polypody* of Oak, as much as will reduce it to a very liquid Consistence ; keep it close stopp'd in a glass Vessel, with this anoint your Bait. It is said, tho' the Weather be inclement, whoever uses this will have Sport, when others can have none.

Take

TAB. VI.





Take of the *Cocculæ Indicæ*, in Powder, two Drams, one Dram of *Affa Fætida*, Oyl of *Turpentine* half an Ounce ; make all into a Paste with fine Flower, which reduce into little Pellets and cast them into the Water. They are said to gather numbers of Fish together to feed on them.

Mix the Powder of these Berries with Flower, Honey, and Crumbs of Bread, into a Paste ; little Balls of this cast into the Water intoxicates the Fish, insomuch that they may be taken up with one's Hands out of the Water.

These Berries had obtained so much Credit, even among early Authors, that they were called *Baccæ Piscatoriæ*, **Fishing-Berries** ; whence it appears to have been an old Practice.

T A B. VII. Fig. i. 2.

W O R M - S E E D.

THERE is much Controversy among Authors concerning the Plant which bears the **Worm-Seed** sold in the Shops. Some think it the Seed of *Zedoary*, only because it has a Scent like it. Others think it a Species of **Wormwood**, and have therefore classed

classified it under that Head ; and others think it is produced by a Species of the *Abrotanum*, **Southernwood**. That it is not belonging in any wise to *Zedoary*, is certain ; for the Seeds of this Plant are dark and round, which will appear to be different from the **Worm-Seed**, when we come to describe it by and by.

We must here follow the Opinions of the major Part of Botanists, and believe it belongs to the **Wormwood** Tribe, and that *Dioscorides* gives the right Information about it. This Author has two Kinds of the Ἀψίνθιον θαλάσσιον, **Sea Wormwood**, the former of which is the *Seriphium*, and the latter (he says) goes by the Name of its native Place in *France*, and is called *Santonicum**, the proper Name of this Seed in the Shops. Some write *Santolina* for **Worm-Seed**, but this seems not so proper, since *Boerhaave*, and many other *Botanists* class it among the different Species of **Southernwoods**, and since we know it in *English* by the Name of **Lavender Cotton**.

As an *Absynthium* then, we shall give it its Etymology. It comes from the *Privative*, ἀ, and ψίνθος, *Delectatio*, Pleasure, that is, giving no Pleasure ; because its Bitterness produces a disagreeable Sensation when tasted. It was also called *Semen Sanctum*, *Holy Seed*, from its

* *Santones*, or *Santoni*, was a general Name for the People of that Part of *France* that was formerly called *Aquitain*, according to the Division of ancient Geographers ; and *Santonicum* is the *Latin* Name for a Town called *Saintonge*, in that Part of *France*.

excellent Virtues. The *English* Word *Wormwood* comes from the *Saxon* Wyrn-wyrne, or Wernemod. *Murm-*
samen, by the *Germans*.

SYNONYMA.

Santonicum & semen sanctum, *Offic.* Sementina, Holy-Wormwood, *Ger. Emac.* 1100. Absynthium santonicum Alexandrinum, *C. B.* 139. *Raii Hist.* i. 368. *Hist. Oxon.* iii. 7. Absynthium santonicum Alexandrinum, five sementina & semen sanctum, *Park.* 102. Lumbricorum semen vulgare & Matthioli, *J. B.* iii. 180.

There is another sort of *Worm-Seed*, called by the *Arabians* *Scheba*, which is the Absynthium santonicum Judaicum, *C. B. Pin.* 139. *Raii Hist.* i. 369. *Chomel.* 445. *Hist. Oxon.* iii. 8. Lumbr. semen Rawolfio, *J. B.* iii. 180. Lumbricorum semen, five absynthium santonicum Rawolfii, *Chab.* 375. This is called in *English* *Arabian Worm-Seed*, and is said to be brought from *Judea* to *Alexandria*; besides which, there is another kind called *Green Worm-Seed*, and by *Pomet* *Chouan*, like the last described, but a little larger, and of the same Virtue.

CHARACTER of Plant and Flower.

Gerard says, "It much resembles the white *Sea-Wormwood* in Shape and Proportion; it rises up with a woody Stalk a Cubit high, divided into several Branches and Wings, upon which grow very small Leaves, among

which are placed Clusters of Seeds in such Abundance, that to the first View it seems to be a Plant consisting all of Seeds." I cannot help remarking here, that *Dioscorides* says of it, "*non adeo seminis fœcundum*," which can hardly be reconciled to the Plenty of Seeds *Gerard* speaks of.

The last mentioned Author says, this Plant thrives in warm Countries, but will not grow in cold Climates; and therefore he mentions a Fraud committed by two Persons, who reported that they had great Plenty of this Plant growing in their Gardens, and sold vast Quantities of Seed, which they called *Worm-Seed*, at a great Price. He doubted the Truth of the Fact, and went to the Place, where he found no other than the common *Ameos*. Wherefore he honestly cautions those who buy it, to take Care of being deceived.

The Plant of this Seed is no doubt a *Sea Worm-wood*; we shall therefore mention in this Place, some other kinds of it, especially because they are used for the same Purposes for which the *Worm-Seed* is ordered.

The *Absynthium Marinum album*, Ger. *White Sea Wormwood*, has many Leaves, cut and divided into infinite fine Jags, like those of *Southernwood*, of a white hoary Colour, and strong Smell, but not unpleasant; among which arise tough hairy Stalks, set with such Leaves; on the Tops of these Stalks grow small yellow Flowers. The Root is tough, and extends in the Ground very much, by which Means it encreases greatly.

The

The *Absynthium Marinum repens*, Ger. **Creeping Sea Wormwood**, has many soft Leaves, growing close by the Ground, of a dark Colour, not so finely jagged as the former; the Flowers grow upon the Tops of the Stalks, of a yellowish Colour; the Root is tough and creeping. This Plant has many weak slender Branches, commonly two Foot long at their full Growth; of a red Colour, and creeping upon the Ground; the Leaves are small, narrow, long, and jagged, or parted towards their Ends into Parcels; they are green above and greyish underneath; the Tops of the Branches are set with many little Stalks, which (upon short little Foot-stalks, arising from the Bosoms or *Alæ* of little longish narrow Leaves) carry small round Knobs, like as in other Plants of this Kind; the Taste is a little bitterish, and the Smell not unpleasant. These Kinds grow upon raised Grounds in salt Marshes near the Sea, in most Places of *England*, which being brought into Gardens, do thrive and flourish, retaining their Smell, Taste, and natural Qualities, which is often prov'd.

Mr. Miller says: The **Roman and Sea Wormwoods** are great Creepers at the Root, and will soon spread over a large Piece of Ground. This Author mentions a **Sea Wormwood** by the Title of *Absynthium maritimum lavendulæ folio*, **Sea Wormwood with Lavender Leaves**, from *Caspar Baubine*. We shall give an Account of other Kinds of **Wormwood** in their Turns.

MICROSCOPICAL *Description.*

Fig. 1. shews the Form of a middling Seed enlarged by the Microscope, for they are of different Sizes among one another. Of all the Seeds I have ever yet examined, this is one of the most singular in its Structure, having scarce any thing substantial in it. The four little Figures near it, are those of a natural Size, which are very small, and therefore renders the Examination of them the more difficult. The Seed has a small End or Handle, being the Place to which the Stem which supports it was fix'd, and the other End is bulky and round, having from the hoary Handles, several Bulges all round, which are soft, and so very tender, that the Rubbing of the Seeds together reduces the Surfaces to Powder, whereby a large Seed may be reduced to a very small one. The Seed seems to be entirely composed of thin brittle Membranes of an extream delicate Contexture, as at *Fig. 2.* having a dark Center, from which it is transparent outward to the Edge all round, and radiated upwards by infinitely fine *Radii*, which do not render it in the least *Opake*. It was with much Difficulty I could separate this Leaf whole, because of the Friability of those Membranes. Thus from the very outer Surface the Seed is composed of these Sort of Membranes one after another, till nothing remains behind. I thought in one or two Seeds, that a little substantial Lump appear'd, but found no such Thing in examining many others afterwards; and these Membranes are so minute, that I was obliged

obliged to view them in the double reflecting Microscope, in order to be sensible of their true Structure. Their Colour before the naked Eye, is of a yellowish Cast ; but before the Microscope for opaque Objects, shine in many Places like Gold. They smell agreeably, and are bitter to the Taste. From this Description, which is as accurate as I could make it, and as near the Truth, it appears that *Sam. Dale* had a true Notion of these Seeds, and therefore to do him the Honour he deserves, I cannot but recite his Words upon it :
 “ *Semina parva, oblonga, quasi ex squamosis tuniculis*
 “ *compacta, flavescentia, amara sunt cum acrimonia, &c.*”
 For this and his whole Work, this Author bespeaks the Esteem of every Lover of natural History.

VIRTUES.

The *Germans* had a Preparation of these Seeds, which they called *Semen santonicum præparatum*, Prepared **Worm-seed**, which was made by steeping it some Days in distilled Vinegar, drying it, and keeping it for use ; and also a Confection called *Confectio seminis cinæ* (*Semen cinæ* being another Name for this Seed, according to *Fred. Hoffman*.) *Hoffman* says, in the *Messis Medica*, the simple Seeds are best without their Preparation in Vinegar, but approves of the Confection. However, there is no better Confection can be made of them, than that common extemporaneous one, made by every Woman about the Country for their Children, of the Seeds, and
 a Spoon-

a Spoonful of *common Treacle* mixed up together, and given them in a Morning fasting.

They are said to be hot, drying, and a good Bitter; and as they are chiefly used against Worms, the best Way (I have known by Experience) is to give equal Parts of these Seeds, *Æthiops Mineral*, and *Rhubarb* to those infested with them, according to the Age, Strength, or other Circumstances of the Patient.

The several *Sea-Wormwoods* are used for the same Intention.

It is a common Practice among Country People, to boil a Pugil of this Kind in Milk, and sweeten it with Honey; the Milk strain'd, and given to Children, effectually kills the Worms.

Dioscorides commends it boiled with Rice, and eaten with Honey for the same Purpose; as also boiled with *Lentils*, and eaten in the same Manner. He says, it loosens the Belly at the same Time, and that Cattle who feed on it grow prodigiously fat. Another Author says, the Juice of *Sea-Wormwood* drank with Wine resists Poison, and is a Specific against that of *Hemlock*.

TAB.

T A B. VII. Fig. 3. 4.

HEMP SEED.

CANNABIS, the *Latin* Name, which is from the *Greek* Name *Κάναβις*, of *Dioscorides*. Some derive it of *Κανάβος*, which signifies slender Twigs wrapped round with Cotton, Lint, or Wax. We can see no great Reason to think this should be the Source of the Word; the Lint or Cotton does not allude to the stringy Bark of the Hemp-Stalks, which makes the Cordage. Others think it comes from *Κάναβος*, which metaphorically signifies a thin, tall, meagre Person. This perhaps might allude to the slender, tall Stalks of the Plant; but *Boerhaave* derives it of *Κάναβοι*, which he says, signifies *Aqua Putrida*, Stinking Water, because it grows in marshy places. *Κάναβοι* according to *Aristot.* signifies Fountains with many Streams. Hemp from Hamp, the *Dutch* Name.

SYNONYMA.

Cannabis, *Offic. Chab.* 478. *Ger. Emac.* 768. Cannabis fativa, *C. B.* 320. *Hist. Oxon.* iii. 433. *Park.* 597. *Raii Hist.* i. 158. *Synop.* 53. *Boerb. Ind. A.* ii. 104. *Tourn. Inst.* 535. *Buxb.* 53. Cannabis mas & femina, *J. B.* iii. 447.

CHA-

CHARACTER of Plant and Flower.

Notæ hujus Characteristicæ sunt folia digitata, corticis filamenta valida & tenacia, ad funes & linreamina texenda idonea. Raii synop. p. 28.

The Character by *Boerhaave* is: It has a square, strait Stalk; the Bark tough, strong, and pliant; the Leaves digitated, joined close together, indented, of a dark Green, rough, and of a disagreeable Smell. The Flowers, in one Plant, without Petals, but enclosed in a *Calix* of five Divisions, expanded, and having five *Stamina*. In the other Plant, there appears a bicornated *Ovaria*, set close upon the Stalks, round, with hard, thin, brittle Shells, including globose Seeds." *Tournefort* says also, that the Seeds are produced by that Species of *Hemp* which has no Flower; and *Cesalpine* tells us, that with the Flowers is barren.

Gerard mentions two kinds of *Hemp*, the Male and Female; the Former is the *Sativa* of *C. B.* and the latter is the *Erratica* of the same Author; both which *Dod.* in his *Pemptades*, 535. distinguishes by, *Cannabis Fæcundans*, and *Cannabis Sterilis*; besides which, *Tournefort* mentions a third kind, which is the *Cannabis Africana*, *procerior, semine minori*.

Here it will be necessary to mention *Gerard's* Description of his two kinds. He says, "*Hemp* bringeth forth strait hollow Stalks, five or six Foot high, full of Branches when it grows wild, but when it is sown in the Fields, it hath very few. The Leaves are hard, tough, somewhat

what black, and, if they be bruised, of a rank Smell; made up of divers little Leaves joined together, every particular Leaf whereof is narrow, long, sharp-pointed, and nicked in the Edges. The Seeds come forth from the Bottoms of the Wings and Leaves, being round, somewhat hard, and full of a white Substance. The Roots have many Strings.

There is another, being the Female **Hemp** (yet barren) and without Seed, which is very like the Male; one must be gathered before the other be ripe, else it will wither away."

What this Author says here, is somewhat obscure, about gathering one before the Maturity of the other; wherefore a Word or two from Mr. *Miller's Dictionary* is wanting to explain it. He says, "The first Season for pulling the **Hemp** is usually about the Middle of *August*, when they begin to pull what they call the **Fimble Hemp**, which means the Male Plants; but it would be much the better Method to defer this a Fortnight or three Weeks longer, until these Male Plants have fully shed their *Dust*, without which the Seeds will prove abortive, produce nothing if sown the next Year, nor will those concerned in the Oil-Mills give any thing for them, there being only empty Husks, without any Kernels to produce the Oil.

The second Pulling is a little after *Michaelmas*, when the Seeds are ripe; this is usually called **Carle-Hemp**. These are the Female Plants, which were left at the Time when the Male were pulled.

MICROSCOPICAL Description.

Fig. 3. is a View of a **Hemp Seed** enlarged by the Microscope, from the little Figure near it, which represents a Seed of a natural Size. At the upper End there appears a Hole, with a rugous Edge sinking pretty deep, which is the *Umbilicus* of the Seed. Several of these *Rugæ* run down from the Edge of the Hole towards the Body of the Seeds, and are soon lost. The Surface of the Seed is smooth, being interspersed all over with little Veins of a Straw-Colour, which inosculate one with another all over, between which, the Interstices are of a darker Colour; this does not appear to the naked Eye, but is very beautiful with the Help of Glasses. The little Veins take their Rise from within a little Way of the *Umbilicus*, and ramify downwards towards the Sides and lower Extremity. On one Side there is a thin Edge all the Way down from one Extremity to the other, from which the Seed is a little depressed on both Surfaces, but rounder at the other; so that the Seed cannot properly be accounted globose, as *Boerhaave* has it, since it is oval in its Outline, and depressed or only convex on both Surfaces. Their Colour is an *Ashy-Brown*.

Fig. 4. a. is a longitudinal Section made through the thin Edge, dividing the Seed into two *Laminæ*, to shew the Substance of the *Parenchyma* contained within; which appears of a white grey Colour, and very succulent or oily, and has a deep Notch or Division running more
than

than half way down quite through the Substance. The Shell that contains it is pretty considerable, consisting of an outer *Cortex* and an inner, which are brittle; between which appears a *Meditullium* which looks of a dusky Colour and moist or oily. *Fig. 4. b.* shews a transverse Section thro' the Body of the Seed, by which that part which is said above to be divided from the main Body of the *Parenchyma*, appears plainly, and the Form of the whole is better known. The Taste of the *Parenchyma* is sweetish and *leguminous*, and not unpleasant, but the Smell is oily and nauseous.

V I R T U E S.

Besides the great Use and Benefit of this Plant in furnishing the World with Cordage of all kinds, it has also its Medicinal Virtues. *Galen* enumerates some Excellencies, yet says, this Plant is hurtful to the Head and Stomach; and tells us, it was a Custom in his Time to eat the Seeds prepared among other Sweet-Meats over a Bottle after Supper. All Authors agree, that it is good for the *Jaundice*, and have ordered it in different Forms.

The expressed Juice of the Seeds in any convenient Vehicle is given with success in that Disease, or made by way of Emulsion; and *Dioscorides* says, the Juice of the Plant drop'd into the Ears eases the Pains. *Boerhaave* says, it wonderfully asswages Venereal Inclinations, by drying up and lessening the Quantity of seminal Matter, and is a Specifick in *Gonorrhœas*. This Plant is of an intoxicating Nature, according to the same Author, wherefore

the *Turks* use it to make what they call their *Massach*, or *Banque*, by reducing the fresh Leaves of the lesser *Hemp* to Powder in an earthen Vessel, wherein they keep Butter. Then they fry it and moisten it, repeating it several times, and use it at any time of the Day when they have a Mind to intoxicate or stupify themselves.

This Author orders a Decoction of the Seeds in Milk or Whey, to be drank for a *Jaundice*, and calls it a noble Remedy. Externally apply'd in Cataplasms, it is a good Suppurative; and the *Oleum Canabinum* is good to assuage Inflammations, and is added to Plaisters for drawing out extraneous Bodies from any Part.

Before we finish this short Account, we shall mention an Observation from *Matthiolum*, who says, the Seeds of *Hemp* produce a quite different Effect in us, and the *Gallinaceous* Fowls; for, says he, in us they extinguish the *Genitura*, but render them more prolific: This, he says, he has experienced in the Depth of Winter, and hardest Weather, when by feeding Hens with this Seed, they have laid Eggs in abundance, whilst others kept with different Food did not. Another Experiment he mentions, is, that if the fresh Plant be boiled, and the Plant well squeezed out, the Liquor being pour'd into dry Chinks of the Crevices, causes all the Worms to come immediately out upon the Ground. This, he says, was a Device among Fishers in order to procure the Worms for Baits to fish withall. Hence he concludes *Pliny* in the Right, who asserts, that the express'd Juice of the Plant causes any Animalcule or Worm, that

has

has got into one's Ear, to come out quickly; and that therefore it must be no bad Medicine for Worms in the Body.

T A B. VII. Fig. 5, 6, 7, 8.

SCABIOUS S E E D.

THIS Plant is called *Scabiosa* from *Scabies*, the Scab, or Itch, because it was esteemed a Specific in that Disease; or from *Scabo* to scratch, or claw, *παρὰ τὸ σκάπτειν*, of *σκάπτω*, *Fodio*, to dig; because those that are troubled with that Disease, for which this Plant is esteemed a Remedy, scratch and tear themselves unmercifully.

SYNONYMA.

Scabiosa, *Offic.* *Scabiosa major vulgaris*, *Ger. Emac.* 719. *Scabiosa vulgaris pratensis*, *Park.* 484. *Scabiosa pratensis hirsuta quæ officinarum*, *C. B.* 269. *Tourn. Inst.* 464. *Scabiosa major communior hirsuta*, *folio laciniato*, *J. B.* iii. 2. *Raii Hist.* i. 374. *Synop.* iii. 191. *Hist. Oxon.* iii. 45. *Boerb. Ind. A.* 129. *Scabiosa arvensis*, *five fegetalis*, *Tabern. Icon.* 159.

CHARACTER of Plant and Flower.

It has a long strait Root, with Stalks a Cubit and a half high, round, hairy, hollow, encompassed with opposite

posite Leaves at large Distances, covered with an hoary Down, shaped like those of the greater Valerian, now and then deeply jagged, of a warmish Taste. The Stalks and Branches end in Heads of Flowers, which are composed of many little Florets, each of which sits on a single Seed, and has its own Empalement, Chives, and *Stilus*. The marginal Florets are longer than those in the Middle, and more jagged. The whole Flower is contained in an Empalement, consisting of several sharp-pointed Leaves in a circular Position; the Flowers, when blown, have almost a plain Surface, very little convex. When they are fallen off, the Seeds are raised into a convex Head. The Leaves, which come immediately from the Root, are entire, and not at all jagged.

The general Botanical Character by *Tournefort* and *Miller*, is, "It hath a flosculous Flower, consisting of many unequal Florets, contained in a common Empalement. Some of these which occupy the Middle, are cut into four or five Segments; the rest, which are placed at the Edge, are bilabiated; each of these fit on the Top of an *Embryo*, which is crowned; and is continued in a proper Empalement, which afterwards becomes a *Capsule*, either simple or Funnel-shaped, pregnant with a Seed crown'd, which before was the *Embryo*."

Gerrard and *Johnson* between them count and describe seventeen Species of this Plant; *Tournefort* tells fifty-four, including all the Species of the *Succisa* or Devil's Bit; and his Translator carries the Number as far as seventy-three, collected from different Authors;
all

all for the most part answering to the first general Character of the *Genus* according to *Tournefort's* Method; and differing but very little in any other Way, than in the Size of the whole Plant, or any Part of it, or the Colour of the Flower.

We must here take particular Notice of *Gerrard's* seventh Kind, which he calls *Scabiosa montana maxima*, the great Mountain Scabious, for the Singularity of its Root. He says, "The seventh Kind of *Scabious* has fundry great rough and round Stems, as high as a tall Man, beset with Leaves like the common *Scabious*, but far greater. The Flowers grow at the Tops of the Stalks like others, but of a faint yellow Colour, which fall as soon as touched with the Hand, whereby it mightily encreaseth, notwithstanding the Root endureth for many Years, and groweth to be wonderful great, and in my Garden it did grow to the Bigness of a Man's Body."

Mr. *Miller*, in his first Volume of the *Gardener's Dictionary*, mentions twelve Kinds of the *Scabious*, which are the principal Sorts propagated in *English* Gardens for the Beauty of their Flowers. The Curious may not think it improper to bring the Names under their View in this Place:

The First is the common Field *Scabious*, already described, which grows wild in many Parts of *England* upon arable Land, and which is used in Medicine under the Name of *Scabious*, and flowers in *June*, and *July*.

The

The Second is the *Succisa* or **Devil's Bit**, called by the *H. L. Scabiosa integrifolia glabra, radice præmorsa*, whole-leaved **Scabious**.

3. *Scabiosa stellata folio non dissecto, C. B. P.* **starred Scabious**, with an undivided Leaf.

4. *Scabiosa stellata folio laciniato, major, C. B. P.* **greater starred Scabious**, with a cut Leaf.

5. *Scabiosa peregrina rubra, capitulo oblongo, C. B. P.* **red Indian Scabious**, with longish Heads, commonly called **Musk Scabious**.

6. *Scabiosa peregrina, capitulo oblongo, flore carneo, H. R. Par.* **Indian or Musk Scabious**, with longish Heads and a flesh-coloured Flower.

7. *Scabiosa peregrina, capitulo oblongo, flore atropurpureo, H. R. Par.* **Indian or Musk Scabious** with longish Heads, and a dark Purple Flower.

8. *Scabiosa peregrina, capitulo oblongo, flore variegato, H. R. Par.* **Indian or Musk Scabious**, with oblong Heads, and a variegated Flower,

9. *Scabiosa Indica prolifera, H. Edinb.* **Indian Childing Scabious**.

10. *Scabiosa Africana frutescens, Par. Bat. Ic.* **African shrubby Scabious**.

11. *Scabiosa Africana frutescens, folio rigido, splendente, serrato, flore albicante, H. A.* **African shrubby Scabious**, with a stiff shining ferrated Leaf, and a whitish Flower.

12. *Scabiosa Alpina folio centaurei majoris, C. B. P.* **Alpine Scabious**, with a greater Centaury Leaf.

Besides

Besides these, this Author recounts in the second Volume of his Dictionary, twenty-three more Species of the same, which are among those mentioned by other Botanists, as by *Tournefort*, *Caspar Baubine*, &c. to which we shall refer the Reader, and only give a very brief Account of the **Devil's Bit**, and a Word or two of the Musk Scabious.

The former is known among Authors by the following *Synonyma* :

Morsus diaboli, & *succisa*, *Offic.* *Morsus diaboli*, *Ger. Emac.* 726. *Morsus diaboli vulgaris flore purpureo*, *Park.* 491. *Scabiosa pratensis nostras præmorsa radice*, *Hist. Oxon.* iii. 45. *Scabiosa radice succisa, flore globoso*, *Raii Synop.* iii. 191. *Scabiosa integri folio glabra radice præmorsa*, *Herm. Cat.* 538.

CHARACTER of Plant and Flower.

The Root is of the Thickness of one's little Finger, set about with long white Fibres, appearing as if cut or bit off at the Bottom, of a warm and bitter Taste; the Leaves are oblong, sharp-pointed, entire, or but little ferrated, greener above than below, hairy, growing by Pairs, and embracing the Stalk with their Pedicles; the Stalk is above a Cubit high, round, solid, reddish, and branched; the Flowers grow on the Tops of the Stalk and Branches, blue, not so plain as those of the **common Scabious**, but globose. All the Florets are of the same Shape and Bigness; whereas in the **common Scabious** the inner ones are the biggest. The Flowers

are cut into four Segments, and have a *Stylus* and *Chives* within them. It flowers in Autumn, and is common in Meadows and Pastures, but chiefly in bushy Places, and in Woods.

Gerrard says, the Flowers are of a dark Purple Colour. It is called *Morsus Diaboli*, and *Succisa*, because the Root seems to have had part of it bit or cut off; hence the Fable mentioned by many Authors, and not omitted even by the great *Boerhaave*, who says of it, "that the Ancients thought the Devil, as an Enemy to Mankind, bit off the Piece in *Paradise*, in order to hinder its use, knowing it would be of infinite Service to the World.

As to the *Indian*, or *Musk Scabious's*, they are preserved for the Beauty and sweet Scent of their Flowers, which continue a long Time, and are in the greatest Esteem with such as delight in the Garden. They are, according to *Mr. Miller*, propagated by sowing their Seeds, the best Time for which is about the latter End of *May* or the Beginning of *June*, that the Plants may get Strength before Winter; for if they are sown too early in the Spring, they will flower the Autumn following, and the Winter coming on soon will prevent ripening their Seeds: Besides, there will be fewer Flowers upon those than if they had remained strong Plants through the Winter, and had sent forth their Flower-Stems in Spring, for these will branch out on every Side, and produce a prodigious number of Flowers, and continue

tinue a Succession of them on the same Plants from *June* to *September*, and produce good Seeds in Plenty.

MICROSCOPICAL Description.

There is no Seed perhaps which has more Beauties than this of the Scabious. *Fig. 5.* is a View of what Botanists call one of the Florets, which is a *Calix* to the Seed, whose Fibres appear to extend themselves over its Edges. This Cup is of an octagonal Form, and makes an Appearance like a fine *Vase*, having scallop'd Edges, and towards the inner Part of the Edge a whitish ruffled Membrane. The Ribs run down from its Mouth, which is Bell-fashioned, and becoming narrower downward, form obtuse Angles, by continuing from the Bend to form the Bottom of the Vase. Between these Ribs down to the Bend, the Vase is clear, though not quite transparent, and from thence to the Bottom the Ribs are hairy, and make an agreeable Figure.

Fig. 6. is the Seed taken out of the *Vase*, and drawn in another Proportion, wherein appears first its thick Body, which is somewhat hoary by the Microscope, and runs up with a narrow Neck, till it divides into five spiculated Fibres (called by *Gerrard*, Purple Thrumbs) whose *Spiculæ* or *Spines* are determined upwards, and are thereby ready to cause the Seed to recede from any thing that might injure it upon being touch'd. The Bodies of the *Vases*, when first ripe, are of a fine Lemon Yellow, but grow by long keeping darker; and the Basen form'd by the Roots of the fine Fibres, is of a fine Green, but

the Fibres themselves of a shining Brown, like brown *Sugar-Candy*, as their Spines are also.

Fig. 7. represents the Stalk to which the *Vases* stick by their Bottoms, all which, when together, form the Head mentioned by Botanists to be the Characters of some Species of the *Scabious*. In this Figure the Body of the Stalk appears all stuck full of narrow whitish Leaves; and the round Spots between their Roots, are the Vestiges of the Bottoms of the *Vases*, so that the Leaves and *Vases* are mixed together all over the Stalk. I cannot imagine the use of these Leaves, except it be to fill up the Interstices between the Bottoms of the *Vases*, and thereby keep them the more firm in their Places, or to receive part of the Nutriment, sent, for the Growth of their *Vases*, to the Stalk, lest they might be supply'd with too great a Quantity, and become luxuriant and useless.

Fig. 8. shews a *Vase* with a Piece of its Side cut out from the Edge to the Bottom. The Reason of my making this Section, was, because in endeavouring to pull out the Seed from the *Vase*, I found it required a considerable Force to extract it with a Pair of Nippers. This put me upon examining what gave it this Stop, and upon making the Section delineated at *Fig. 8.* I found the bulbose Part of the Seed contained in a delicate white membranous *Case*, arising from the inner Membrane of the Bottom of the *Vase*, and running up about half way the Neck of the Seed, embracing it pretty close, with a Mouth

Mouth consisting of six or eight Sides, as beautifully formed as that of any fine cut Glass *Decanter*.

The Seed is loose in this *Theca*, so that it may be turned round within it as many times as one pleases, but cannot be pulled out without tearing this beautiful *Theca*, upon Account of its narrow Neck : Therefore Nature has design'd, by securing it thus, that the Seed and its Vase should be sowed together in the Ground. Whatever Differences shall hereafter appear between these Seeds, or any other, we shall not omit to exhibit them.

V I R T U E S.

Tournefort in his second Herborisation about *Paris*, makes an Extract from the Registers of the Royal Academy of Sciences, wherein he mentions some Experiments made on **Scabious**, as he frequently does of other Plants, and says, " the *Scabious* is bitter, and renders blue Paper a little red ; whence he would conclude it contains a Salt, resembling that of *Sal Armoniac*, with a great Quantity of *fatid* Oil and Earth.

This Plant is a good *Alexipharmic*, and of great Service in Infarctions of the Lungs as an *Expectorant* ; it is also good in Pleurifies and Inflammations of the Glands of the Throat, either by way of Decoction or Infusion, and externally apply'd is reckon'd a Specific in cutaneous Diseases. The *French* have a Syrup of **Scabious** counted good in these Cases, made of the Juice of the intire Plant ; but say it is necessary to bathe the Parts with its Decoction, to which two or three Spoonfuls of campho-
rated

rated Brandy must be added, and then strained through a fine Linnen; the use of which must be continued during the Use of the Syrup. This Decoction is said to be further exceeding good, where the Urine appears purulent; and for internal Ulcers, drank a considerable time. *Boerhaave* says, that Dandriff, Scurf, Itching, and Scabs of the Head washed with it, are taken away; he says, these Plants are good in all Diseases of the Breast, for attenuating and lubricating, if its Decoction be drank with Honey, especially in warm Regions: that the Seeds are given in all violent Fevers with Success, and, in Wounds or Contusions are very Efficacious, and especially in pestilential Diseases, and the *Lues Gallica*, are more prevalent than the *Sarsaparilla*, or *Lignum Guaiacum*, and sums up the Virtues of **Scabious** in the following Lines:

*Urbanus per se nescit pretium scabiosæ,
Nam purgat pectus, quod comprimit ægra senectus;
Lenit pulmonem, purgat laterum regionem;
Abscessus frangit, si lotum subdita tangit,
Tribus unita feris anthracem liberat horis.*

The People who bring Herbs to Market, sell the **Devil's Bit** instead of the common **Scabious** we have been speaking of, whose Virtues are counted much the same in all Respects; one thing, however, I must mention which I saw, which is, that a Man in a Country Place was much afflicted with bilious Complaints, as Colic Pains, bilious Stools, Indigestion and Reachings, wherein he vomited much glairous and yellowish Matter in a Morning, with a yellow swarthy Skin; all these Complaints

plaints continued at times for six or seven Months. At last, a Neighbour advised him to drink the Juice of Devil's Bit in warm Ale several Mornings successively, which he did; and it vomited him smartly, evacuating much of that glairous Matter every time he took it, by which in some Days he grew better, and was at length restored to a good State of Health.

T A B. VII. Fig. 9. 10. 11.

TAMARIND SEEDS.

TAMARINDUS, so called from *Tamar*, the Arabian Name for a **Date**, and *Indus*, or *Indicus*, *Indian*, because they grow in *India*, and are in some Measure like the **Dates**. The *Arabians* did not call them so from the Resemblance the Trees bear to each other, but because they could not find a more suitable Name for the Fruit, as they found Stones or *Officula* in them. They are called *Puli* in *Malabar*; and *Ambili* in *Guzarate*; in *Canarin*, *Chincka*, and the Stones *Chincharo*; and in *Malaya* they are called *Assa*.

SYNONYMA.

Tamarindus, *Offic.* *Ger. Emac.* 1607. *Cat. Jam. Hist.* ii. 45. *Commel. Flor. Mal.* 259. *Pluk. Almag.* 361. *Park. Theat.* 217. *Hern.* 83. *Herm. Cat. Hort. Lugd. Bat.* 588. *Raii Hist.* ii. 1748. *Tourn. Inst.* 660. *Tamarindus* & *Caranda*, *Bont.* 94. *Tamarindus oxyphænicon*, *Mont.*

Mont. Exot. 10. Tamarindi, *J. B.* 422. *Chab.* 90. *Boerb. Ind. A.* ii. 59. *Ind. Med.* cxiv. Tamarindi, Lufitanis Tamaræazecla, *Mareg.* 107. Tamarindus Arabica, *Jonsf. Dendr.* 385. Tamarindus Derelside appellata, *Alp. Egypt.* 37. Tamarindus Derelside Prosperi Alpini, *Breyn. Prod.* i. 51. Tamarindus vel Derelside Ægyptiorum excellentissimo Prosp. Alp. *Pon.* (*Clusius's Edition*) cccxxviii. Il Tamarindo, e Derelside de gli Egittii, *Pon. Ital. Bald.* 23. Siliqua Arabica, quæ Tamarindus, *C. B. Pin.* 403. Hijabila, Tamarindus, *Herm. Mus. Zeyl.* 27. Jutra five Tamarindus, *Pis.* (Ed. 1658) 157. Balam-pulli, five Maderam-pulli, *Hort. Mal.* i. 39. *Tab.* 23.

CHARACTER of Tree and Flower.

The Root of the Tamarind Tree has large Ramifications with a redish Bark.

The Trunk is as thick as two Men's Bodies, with a thick Bark cover'd by a blackish Crust, which in some Places has a redish Ash-colour mixed with it, especially in the older Branches.

The Leaves grow upon green Twigs, which are very slender, striated within, not above a Span long, which, at their Rise, swell a little with a light green Tubercle ; the Leaves grow by Pairs in two Series, with their interior Parts set a little towards the Summities of the Pedicles cutting them obliquely with their Surfaces. They are small, oblong, and narrow, about an Inch long, and near half a Finger's Breadth, every where uniform, except that they are broader behind than before, round on
one

the anteriour Edge, a little slender but solid in their Contexture, with a smooth Surface, of a darkish Green on one Side and lighter on the other ; of an acid Taste, having a Nerve on the Middle of the adverse Side pretty imminent, from which several small *Venulæ* run, inosculating and subdividing with each other.

The Flowers, which are eight or ten, more or less, together, grow on green Pedicles, which arise from the Origin of the Leaf-twigs, and consist of seven *Petala* of different Colours, placed in a thick round *Calix*, having no Smell ; of the Flower-leaves the four outward ones are entirely white, next are yellowish, oblong, cuspidated forward, slender, and having no Veins.

From the Middle three green *Stamina* arise, which are curved, and first joined in one ; and afterwards divided. Two of these have *Apices*, which are first yellow, and afterwards of a dark Red. With these one green *Stilus* arises thicker than the *Stamina*, growing between them and the surrected Leaf, which is the *Germen* of the Pod. The *Gemmæ* are flat on one Side and round on the other, first saturated with Red, then when they grow oblong, are of a whitish Green.

The *Parenchyma* of the Fruit is first of a whitish Green, when ripe of a dark Yellow or Red ; the Seeds when unripe are green and shining, *Hort. Mal.*

Sir *Hans Sloan* says, they are planted in many Places in *Jamaica*, and seldom miss thriving ; that they were brought into *Egypt* from *Ethiopia* and *Arabia Fælix* ; that these Trees were Strangers in the *West-Indies*, till

they were first planted at *Acapulco*; *Payton* found *Camarind-Trees* at *Mobelia*; they are also planted in the *Mogul's* Country; and are also found in an Island in the Lake of *Rufumba* about *Sofola*. *Hist. Jam.*

Prosper Alpin. in the tenth Book of *Egyptian* Plants, has a Description which differs a little from the foregoing, and contains something Curious; therefore it deserves a Place here, in order to make our Account more compleat.

He says, "The *Camarind-Tree* is the Size of a *Plumb-Tree*, having Boughs and Leaves like those of the *Myrtle*, placed opposite to each other upon a Twig, having a single one at the End. The Flowers are white like those of the *Orange-Tree*. From the middle of the Flower arise four slender white Fibres, which are succeeded by large Pods, first green, then ripening into an Ash-colour, which contain hard, brownish, cornered Seeds, and a black acid Pulp. These Trees grow in some few Gardens of *Egypt*, and have been brought thither from *Arabia* and *Ethiopia*. This Tree has this strange Quality, that the Leaves always follow the Sun, and when it sets they all contract themselves and expand at its Rise again. They perform their Contraction so strongly, that they hold and embrace the Pods, covering them all round, and at Sun-rise quit them by opening themselves; yet I have observed this folding of the Leaves to be common to several other *Egyptian* Plants, as *Acatia*, *Abrus*, *Absus*, and *Lesban*.

There

There is a reigning Opinion among some, that the *Camarind-Trees* of the *East*, differ from those of the *West-Indies*, which may be a vulgar Error, since it is probable from the History of this Tree, that they were brought from the *East-Indies*, and propagated from them in the Western Parts of the World; and since we find but one Species of it mentioned amongst Authors. This is the more probable, as Mr. *Miller* in his Dictionary sees no Difference between the Plants raised from the Seeds of both Places; and as to the Pods, if there be any Objection arising about them, because it is said those of the *East-Indies* contain more than the others, it is easy to remove it, for I have had an *American Camarind* Pod with seven Seeds in it, and others with different Numbers from one to seven, whence it is probable they differ upon the same Tree as to the Number of their Seeds, as much as our common Beans or Pease do; some of which have Pods with six, seven, or eight Beans, and others with but one or two at the same Time. Indeed *West-Indian Camarinds* are accounted more agreeable than those of the *East*, which are said to be more harsh and acid; whether this can arise from the Manner of preserving and potting them, is a Question which I cannot at present resolve. It is however said, that the *East-Indians* put Salt into the Pots with those they send over here. The others seem to be preserved chiefly with Sugar, which like Lemons, whose acid Juice is very sharp, yet by a sufficient Quantity of Sugar may be reduced to a most grateful Taste.

Mr. *Miller* says, if the Plants are managed right, they will grow here very fast, and that he has had them upwards of three Foot high in one Summer from Seed, and had one Plant which produced Flowers the same Season it was sown ; but that this was accidental, having never had one in Flower since, tho' he has several Plants of different Ages, one of which was five Years old at the Time he mentioned it in his Dictionary, with a broad spreading Head.

MICROSCOPICAL Description.

Fig. 9. is a Pod of the **Tamarind** consisting of three *Loculi* or Cells, each of which contains a Bean.

The Stem is but slender in Comparison of the Size of the Pod, and has an Appearance of two little Rings or Articulations before the Commencement of the Shell. The Shell is of a brownish yellow Colour and rough, appearing, by the Help of the Microscope, exactly like the upper Crust of a Pye not over-baked, being somewhat of a lighter Colour on the inner Surface than the outer.

The Divisions of the Pod are distinguished by Strictures between the protuberating Bellies of the *Loculi* ; whereas *Johnson*, in his Appendix to *Gerrard*, has given the Figure of a Pod, uniform and strait at the Sides, resembling a common *English* Bean-Cod : He says indeed, " the Cods were never brought to *England*," which makes it probable he never saw one entire ; nor do those delineated in the *Hortus Malabaricus* seem to have been taken from the perfect Pod. Each of these, whether
they

they contain one or more Seeds, is thicker at the pendulous Extremity than at that to which the Stem is fixed, and has at the former a little pyramidal Process projecting from it. They are not in close Contact with the Pulp, which covers the Seeds or Beans, but seem as if the Pulp had shrunk away from the Shell, leaving almost as much vacant Room as it occupies.

Fig. 10. When the Shell is strip'd off, and clear'd away, the Branch of stringy Fibres, represented by this Figure, appears to arise from the Stem, and runs along the Surface of the Pulp pretty equally distributed, and each Fibre sends off lesser Fibres from its inner Side through the Substance of the Pulp every where. These serve no doubt for two good Purposes; the first is, to secrete the Juices necessary to form this Pulp; and the second is, to serve as Ligaments to keep the Pulp, which is very soft, together, by entangling themselves throughout the whole Substance. The *Cortex* of these Fibres is brown, but the inner Contexture is white and stringy, well enough contrived for conveying the Juices mentioned.

The Number of them is constantly the same in every Pod; that is, three principal ones with their *Fibrillæ*, and two less considerable, each of which is divided into two slender ones, for the most part without any other Ramifications.

Fig. 11. a. represents one of the Beans in its Membrane. After the Pulp is cleared away, every Bean appears to be clothed with a white, strong, tough, membranous Bag, which is most commonly square, and detach'd from
its

its neighbouring Bag, or any other thing, except some of the *Fibrillæ* from the vascular Twigs or Fibres just described. *b.* is the Bean taken out, which is of a very hard Contexture, of a polish'd Brown-Colour in the Middle, but a little more light round the Edge, and considerably more porous. These two Figures as well as the Pod and Bunch of Fibres at *c.* is a little enlarged, and represents a longitudinal Section of the Bean, shewing its cortical Substance, its *Parenchyma*, and the *Germen* of first Rudiments of the Tree. The *Cortex* is composed of two Tables, between which is a cellular Substance; this is of a dark Colour, but the *Laminæ* are brown. The *Parenchyma* is exceeding hard, being farinaceous, but having an austere restraining Taste, as has also the Shell of the Pod, and the *Cortex* of the Bean also. The *Germen* is a little round Head with a small Tail running from it, which is lost in the *Parenchyma*, and is very like that little Bone of the *Ear*, called the *Malleus*. The Substance of the *Parenchyma* has much the same Appearance with that of a *Horse-Bean*. The *Germen* itself when cut, appears to have a *Nucleus* within it.

V I R T U E S.

The Pulp of the *Camarinds* is acid, pleasant, and cooling, wherefore it has a Place as an Ingredient in the *Lenitive Electuary*, and is order'd in *Fevers* to refresh, cool, and moisten the Mouth, and allay Thirst by gradually sucking them. *Boerhaave* says, they are good in *Diarrhæas*, and strengthen the Stomach, and in inordinate

inordinate *hæmorrhoidal* Discharges are much commended ; the Leaves of the Tree answer the same Purposes.

Alpinus says, the Leaves are used to kill Worms in young Children, and that their Infusion or Decoction loosens the Belly. The *Arabians* preserve the green Fruit with Sugar, which they use in Plenty when they travel, both to quench Thirst, and at the same time keep their Bodies open and cool.

Dampier writes, that one Captain *Heath*, when a great Number of his Crew was sick, ordered them to eat *Camarinds* with their Rice, which contributed greatly to save them. The Inhabitants of *Java*, according to Sir *Hans Sloane*, make an agreeable Drink of two Ounces of *Camarinds*, two *Lemons*, two Pounds of *Sugar* fermented in thirty *Amphoræ* of Water. This is much the same with what we call *Sherbet*, and the *Italians Sorbetto*, which is a frequent Drink with the *Turks*, and wants only the *Brandy* or *Rum* to make *Punch*, so much in use, at present, among us.

The Pirates of some Parts of the *East-Indies*, when they take Prizes, if they mistrust they have any precious Stones, make the Prisoners drink a Quantity of salt Water and *Camarinds* by way of Purge, to cause them to void whatever Diamonds, &c. they might have swallowed in order to preserve them.

In a Word, they are good in all Intentions as Coolers and Laxatives ; besides their grateful Taste to Mouths, that in several Diseases are hot, clammy, and nauseous.

TAB.

T A B. VII. Fig. 12, 13.

G O U R D S E E D.

C*ucurbita* in *Latin*, from *Curvata*, bent, or curved; because being a flexible Plant it bends, if not supported. The *Greek* Name is Κολόκυνθα, according to *Dioscorides*, yet one would imagine somewhat improperly; there being nothing in the Derivation of the Word that can, in the least, appropriate that Name to the Gourd. We shall therefore refer the Reader to the *Colocynth* for its Etymology, which is its proper Place. *Gourde* is said to be *Chaucer's* Word for a little *Bottle*, which agrees well with the Epithet *Lagenaria* as follows:

SYNONYMA.

Cucurbita, *Offic.* *Cucurbita lagenaria*, *Ger.* 777. *Emac.* 923. *Cucurbita lagenaria major*, *Park. Theat.* 769. *Cucurbita lagenaria*, flore albo, folio molli, *C. B.* *Pin.* 313. *Hist. Oxon.* ii. 23. *Boerb. Ind. A.* ii. 80. *Cucurbita lagenaria*, *J. B.* ii. 216. *Raii Hist.* i. 632. *Tourn. Inst.* 107. *Elem. Bot.* 89. *Chab.* 129.

CHARACTER of Plant and Flower.

The **Gourd** has long hollow Stalks like those of the Vine, parted into Branches, which by the Help of their Claspers cling to, and climb any thing that stands near it.

it. The Leaves are large and sharp-pointed, near as great as that of a **Burdock**, but softer, and somewhat covered with a Hoariness, so are the Stalks and Branches. The Flowers are white, and arise from the *Alæ* of the Leaves, which are succeeded by the Fruit, and which vary in Shape even upon the same Plant.

Pliny says, the **Gourd** is changeable into any Form one would confine it to, while young and growing, according to the Mould it is put into, and being suffered to climb upon any Arbor, from which the Fruit may hang; they having stretched out by their own Gravity to the Length of nine Foot. The Rind, when ripe, is very hard, woody, and of a yellow Colour; the Pulp is white.

This Capacity in the Fruit, of receiving copious Nourishment, and of being extended to a prodigious Compass, is very surprising, and shews that there is scarce any Limit to be set to their Accretion, if the warm Season and due Nourishment continued long enough; so that no Body can tell to what a Size they would amount, if favoured with every necessary Supply, and in their native Country. This appears pretty evident, by the Account given us by *Mr. Miller* in his Dictionary, where he directs the Manner of cultivating them; and says, he measured a single Plant, which had run upwards of forty Feet from the Hole into which it had been transplanted, and had produced a great Number of side Branches; so that he does not doubt (if it had been encouraged, and the

side Branches permitted to remain, but it would have fairly overspread twenty *Rods* of Ground.

This is not at all to be doubted, and however strange it may seem to some, this Account is much less surprising than that given to the Royal Society by *Paul Dudley, Esq;* (and printed in the *Transactions*) from *New-England*, wherein he mentions a single Plant of this Kind, which, without any Culture, spread over a large Spot of Ground, and from which Plant, two hundred and fixty Fruits were gathered, each, one with another, as big as a Half-peck.

Tournefort distinguishes ten Species of the Gourd.

1. The long Gourd, with a soft Leaf and white Flower.
2. The hooked Gourd, with a soft Leaf and white Flower.
3. The broad Gourd, with a soft Leaf and white Flower.
4. The long Gourd with a white Flower and thick Belly.
5. The American Gourd, round, and two Cubits long.
6. The bottle Gourd.
7. The bottle Gourd, with a white Flower, soft Leaf, and the Fruit more like a Top, or Pyramidal.
8. The bottle variegated Gourd.
9. The great bottle Gourd, with rough Leaves.
10. The lesser rough bottle Gourd.

Gerrard

Gerrard gives an Account of a Species of this Plant, he calls the *Cucurbita Anguina*, Snake's Gourd (which I take to be only a Species of the Bottle Gourd) besides the *Lagenaria* we have quoted him for in our Synonyma. He has also two other Kinds which deserve particular mention here, viz. the *Cucurbita lagenaria sylvestris*, wild bottle Gourd, and the *Cucurbita sylvestris fungiformis*, Mushroom wild Gourd: The former of these is in all Respects like the Bottle Gourd (the Plant as well as the Fruit) but less, and the Fruit not exceeding the Bigness of a Man's Hand. The outer Rind is at first Sight green, afterwards it becomes of a woody Colour and Hardness. The inner Pulp is moist and very full of Juice, in which the Seed lies; " the Whole, says he, is as bitter as *Coloquintida*, which has " occasion'd many Errors, one especially in taking that " Fruit for the wild Gourd. Whereas they are much " deceived, for *Colocynthis* is the wild citrul Cucumber, whereof we have treated in the Chapter of Citruls.

The Mushroom Gourd has trailing Branches with Claspers, to lay hold on any thing to support them; the Leaves are broad, cut into deep Sections like those of the Vine, soft and very downy, whereby it is particularly known to be one of the Gourds. The Flowers are very white like the others, growing like the Head of a Mushroom. I never saw one of this Kind.

MICROSCOPICAL Description.

Fig. 12. shews a Seed of this **Gourd**, whose *Synonyma* we have given, somewhat enlarged by a Microscope; near which the small Figure represents it of its natural Size. Both Sides are alike in their Marks or Features in all Respects. The upper End is angular, in which is the *Umbilicus* of the Seed, and after the two Sides run downward from the blunt Point, they form two lateral obtuse Angles, and from thence run parallel down a little Way, and swelling as it were into Shoulders form the broad Body of the Seed. The Bottom projects on each Side into two blunt round Processes, like the going off of the Thighs from a human Body. The Lines upon the Surface, when magnified, appear to be rough and porous, conforming to the Shape of the Outline at the smaller End, but growing elliptical downwards, and meeting in a Point.

This Seed is flattish and pretty thick, and when newly ripe of a whitish Colour, but turning towards a Brown by long lying.

Fig. 13. represents a longitudinal Section through the Middle, dividing the two Surfaces asunder; in this Figure the Thickness of the Shell of the Seed appears, with the natural Form of the Kernel, in close Contact with it all round. The Substance of the Shell is very uniform and compact, and the Surface of the Kernel is gently fulcated, as if by the Pressure of minute Vessels of some Kind, ramify'd downwards. It is round at the
lower

lower End, and, upwards, runs to a sharp Point, from which the first Shoots of the Plant arise. It is white, and the Shell is lined with a delicate white transparent Membrane, upon which it lies. The *Apex* or Point inclines to a yellowish Colour, and the entire Kernel is agreeable to eat.

VIRTUES.

These Seeds are among the greater cold Seeds, and the Leaves are also used as Coolers externally apply'd, to assuage Inflammations, and according to *Matthiolum*, to Lying-in Women's Breasts, to prevent too great an Increase of Milk. *Boerhaave* says, the Seeds are not to be kept above a Year, for after that Time they become rancid; this does not appear to me, having some by me in a very good State at present, which are two or three Years gathered.

The Pulp of the Fruit, scraped and laid on by way of Cataplasm, assuages Swellings with Inflammations; and with due Preparation of the Body beforehand, is good in Inflammations of the Eyes so apply'd. The Seeds are said to promote Urine, and open the Body; and the Pulp of the long *Gourd* boiled in Water, and apply'd to the *Spine* of a Person in a *Hætic* State, while the Heat is upon them, to be renew'd several Times, is of great Service; this is what *Benedictus Oheimius*, a noted German Physician, and in great Esteem with *Fred. Hoffman*, had often experienced, who, as this Author affirms, ordered a distilled Water to be made of the *Gourd* Plant,

Plant, with which and the Seeds he made an Emulsion, to be constantly used by Hectical Patients, and that with Success.

The Natives of *India* make Bottles of the dried, hardened Shells of this *Gourd*, by scooping out the Pulp.

T A B. VII. Fig. 14.

LINSEED, or FLAX SEED.

LINUM, the *Latin* Name, so called either from *Λίνον*, the *Greek* Name, or of *Linio*, to anoint; because it is emollient, and produces from its Seed an Oil of an emollient Nature. Our *English* Word *Flax*, seems to come from the *Dutch* *Vlas*, or the *Saxon* *pleax*, the Names of these two Nations for that Plant, or from the *German* *Flachs*.

SYNONYMA.

Linum, *Offic.* *J.* *B.* iii. 450. *Chab.* 479. *Raii Synop.* iii. 362. *Linum fativum*, *C. B.* *Pin.* 214. *Ger. Emac.* 556. *Raii Hist.* ii. 1072. *Tourn. Inst.* 339. *Elem. Bot.* 282. *Park. Theat.* 1335. *Boerb. Ind.* A. 284. *Rup. Flor. Jen.* 105. *Mer. Pin.* 72. *Euxb.* 195. *Linum vulgare fativum*, *Merc. Bot.* i. 84. *Phyt. Brit.* 69. *Linum annuum cæruleum fativum*, *Hist. Oxon.* ii. 572.

CHA-

CHARACTER of Plant and Flower.

It grows from a small Root, with but few Fibres, having a round, single, smooth Stalk, without Leaves, from a Cubit to a Cubit and half high, more or less. It is divided into Branches towards the Top; the Leaves are pointed, smooth, and narrow, near two Inches long, set irregularly on the Stalk; the Flowers are blue, consisting of five streaked Leaves, pretty round towards the Top, on an Empalement cut into fine sharp Segments, and supported by Footstalks, which are long and small. The following Description from *Miller*, of the Flower, being more perfect, we shall insert it here. “The Leaves for
 “the most part grow alternately on the Branches; the
 “Cup of the Flower consists of one Leaf, is tubulous,
 “divided into five Parts at the Top; the Flower con-
 “sists of five Leaves, which expand in form of a Clove
 “Gilliflower; the Ovary which rises from the Center
 “of the Flower-cup, becomes an almost globular Fruit,
 “which is generally pointed, and composed of many
 “Cells, in which are lodged many plain, smooth Seeds,
 “which are blunt at one End, and generally sharp at the
 “other.

Tournefort counts thirty-three Species of Flax, which are preserved in Botanical and other Gardens of the Curious. The Names of six Kinds, however, will not be improper here, which are most commonly met with, and are mentioned particularly by the above Author.

1. *Linum sativum*, C. B. Manured Flax.
2. *Sativum latifolium Africanum, fructu majore*, Tourn.
Broad-leaved *African manured flax*, with a large Fruit.
3. *Maritimum luteum*, C. B. Yellow maritime flax.
4. *Sativum humilius, flore majore*, Bobart, Dwarf-manured flax, with a larger Flower.
5. *Perenne majus cæruleum, capitulo majore*, Mor. Hist.
Greater perennial blue flax, with a large Head.
6. *Perenne majus cæruleum, capitulo minore*, Mor. Hist.
Greater perennial blue flax, with a smaller Head.

Although of the wild Kinds of flax, many are enumerated by *Tournefort* in the Number I have mention'd, I shall only bring hither the Names of those described by *Johnson*; it will be both useful and instructive to know them, and to have a short Sketch of their Virtues.

1. *Linum sylvestre floribus albis*, wild white flax. This is like the Garden flax in Leaves and Flowers, only the latter vary in their Colour, being sometimes white, sometimes of a deep Blue, sometimes a Violet-colour, and sometimes White and Purple.

2. *Linum sylvestre tenuifolium*, slender-leaved wild flax. This is like the common flax, but every way smaller, and of a Cubit high; the Flower is a light Purple, or Flesh-Colour.

3. *Linum sylvestris latifolium*, broad-leaved wild flax. This has many hairy Stalks, encreasing from the same Root several Years successively; a Cubit high, with

hoary broad Leaves, and blue Flowers consisting of five Leaves each, to which succeed sharp-pointed Heads full of Seeds, of the same Shape with those of the common **Flax**, only black and shining. This Plant is larger than the common.

4. *Chamaelinum perpusillum*, dwarf wild **Flax**. This is scarce a Span high, is in all Respects like the common Flax, in proportion to its Size, except having pale yellow Flowers.

5. *Linum sylvestre Catharticum*, Mill Mountain, or purging **Flax**. The Root is small, crooked, and fibrous, the Stalks round, and from nine to twelve Inches long, divided at the Top into several small Branches, greener than the lower Part of the Stalk. The Leaves are small and green, like those of **Lentils**, with one middle Nerve or Rib; set almost opposite to each other on the Stalk.

The Flowers are white, with yellow *Ungues* and Chives, which are succeeded by little Buttons, dividing when ripe into five Parts, and produce small, flat, polished, yellow Seed. The Plant is bitter, and frequently used as a Purge by Country People. It grows in Meadows by fresh Water Sides, sometimes in Downs, and on the Sides of Hills; appears in the Beginning of Spring, and flowers all the Summer.

6. *Linum sylvestre latifolium tertium*, *Clusii*, the third broad-leaved wild **Flax**. The Root is thick and twisted, having several red hard Stalks, a Cubit high, with large

thick smooth Leaves ; the Flowers are five-leaved and yellow, with many fine Fibres, some long, some short, arising from the Middle. The Head is flat, and contains black Seeds. It flowers in *June* and *July*, and the Seed is ripe in *August*. This is a *German* Plant.

7. *Linum marinum luteum*, yellow-flowered marine wild Flax. *Lobel* calls it *Linum marinum luteum Narbonense* ; and is the *Linum sylvestre* of *Matthioli* and *Dodonæus*. It is a Cubit high, like common Flax, but somewhat less every way, with yellow Flowers, and grows in the South of *France*.

MICROSCOPICAL Description.

Fig. 14. a is a Representation of a Grain of the common **Flax-Seed**, somewhat augmented by the Microscope ; in it we may consider a *Basis* and an *Apex*. The *Basis* is round, pretty thin at the Edge, and protuberant towards the Middle. The *Apex* does not run to a Point, but is blunt and turning to a sort of Notch on one Side, which is the *Umbilicus* of the Seed. As it is thin-edged all round, a little Convex towards the Middle, and the Surface very smooth, the Seeds slip over each other upon the least Motion of the Vessel which contains them. The *Cortex* is of a fine brown Colour, but the Edge all along down from the *Umbilicus* is yellowish. *b.* is the *Nucleus* taken out of the Covering, and is of the same Shape with the entire Seed at the *Basis*, but at the other End rises to a Point, not taper, but like a sharp Process

Process growing from an elliptical Grain. The *Parenchyma* is white, and of a smooth oily Taste.

V I R T U E S.

It is a Happiness to Mankind, so good Medicines, as these Seeds of common *Flax* produce, are so plenty, and easily obtained by the poorest Person. A short Account of the different Ways of using them, and the Purposes for which they are necessary, will therefore be proper here.

The Oil expressed from *Linseed* is greatly Anodyne and emollient, and an Obtunder of Acrimony; and for the great Opinion *Boerhaave* had of it, I shall set down what he has often dictated concerning it. The Oil is of great use in the most desperate *Colics*; it relaxes and softens stiff hard Joints; it is a most excellent Remedy, taken in a proper Quantity with Sugar, in a *Pleurisy*, and causes an easy Expectoration in *Coughs*; and in Glysters is excellent in Hemorrhoidal Pains, and softens hard Excrements obstructed in the Guts, at the same Time suppling and relaxing them when hot and rigid. This Oil made up into an Electuary with the *Terra Sigillata* and *Japonica* is a great and efficacious Medicine in *Dysenteries*, and was held as a great Secret for that Purpose; and the Oil alone is of Service in gravelly Complaints.

An Emulsion made of the Seeds is excellent in *Pleurisies* and *Peripneumonies*, and in all Intentions where an Emollient is required; or a Decoction made in Water

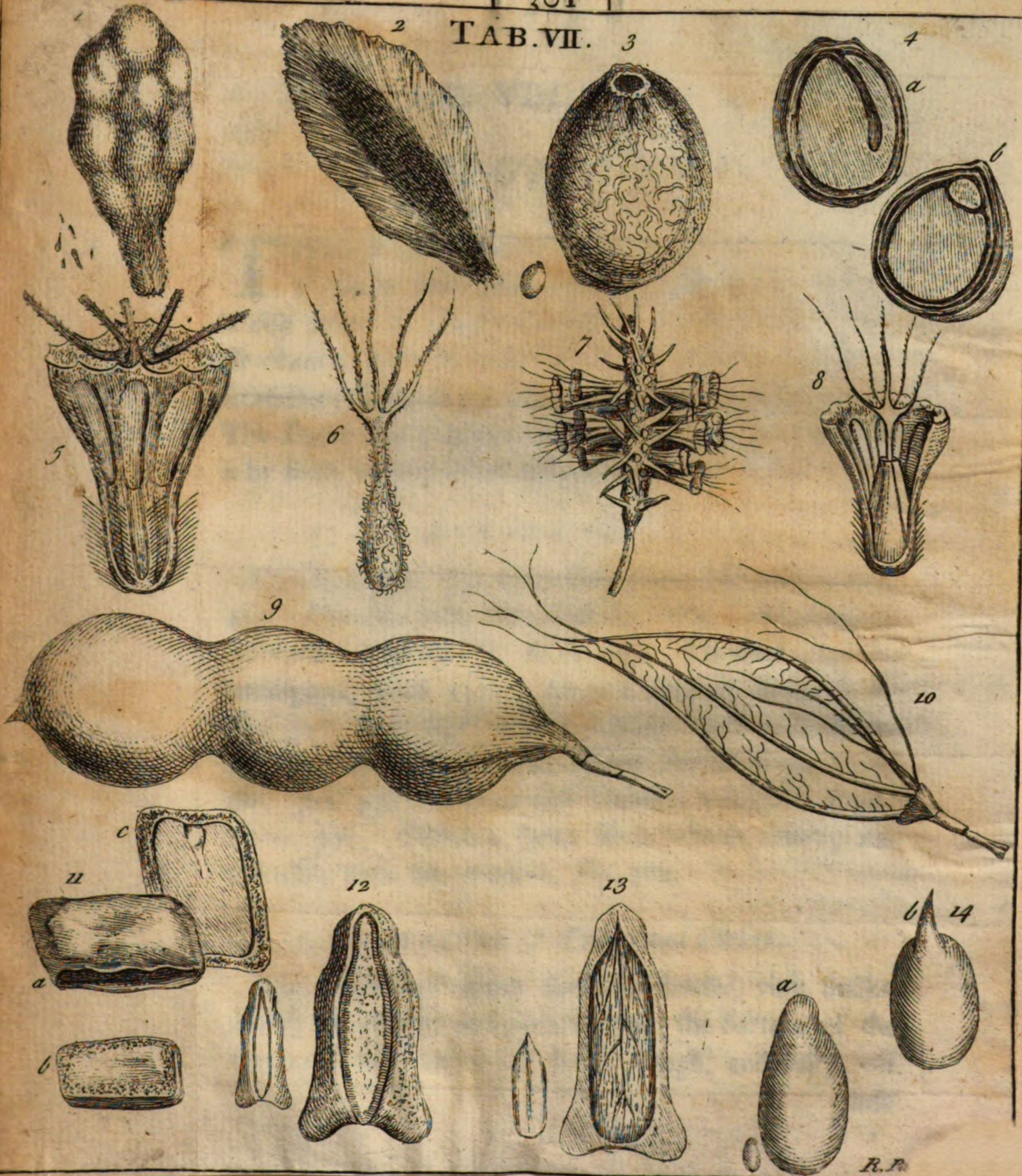
and sweetned with Honey or Sugar, is good in the same Cases. It is a common Practice, and a pretty successful one, to make an Infusion of the Seeds in the Manner of *Thea*, sweetened with Honey and drank constantly for some time, in hard Coughs. I have known much Benefit received from it in many People.

The Seeds powder'd, and mixed with some *Honey* and *Pepper* to the Consistence of an Electuary, cures an inveterate Cough; a Cataplasm made with *Linseed* and *Fenugreek Seed* softens Tumours or Hardnesses in any Part it can conveniently be lay'd to; and Raisins eaten with the Oil open Obstructions greatly.

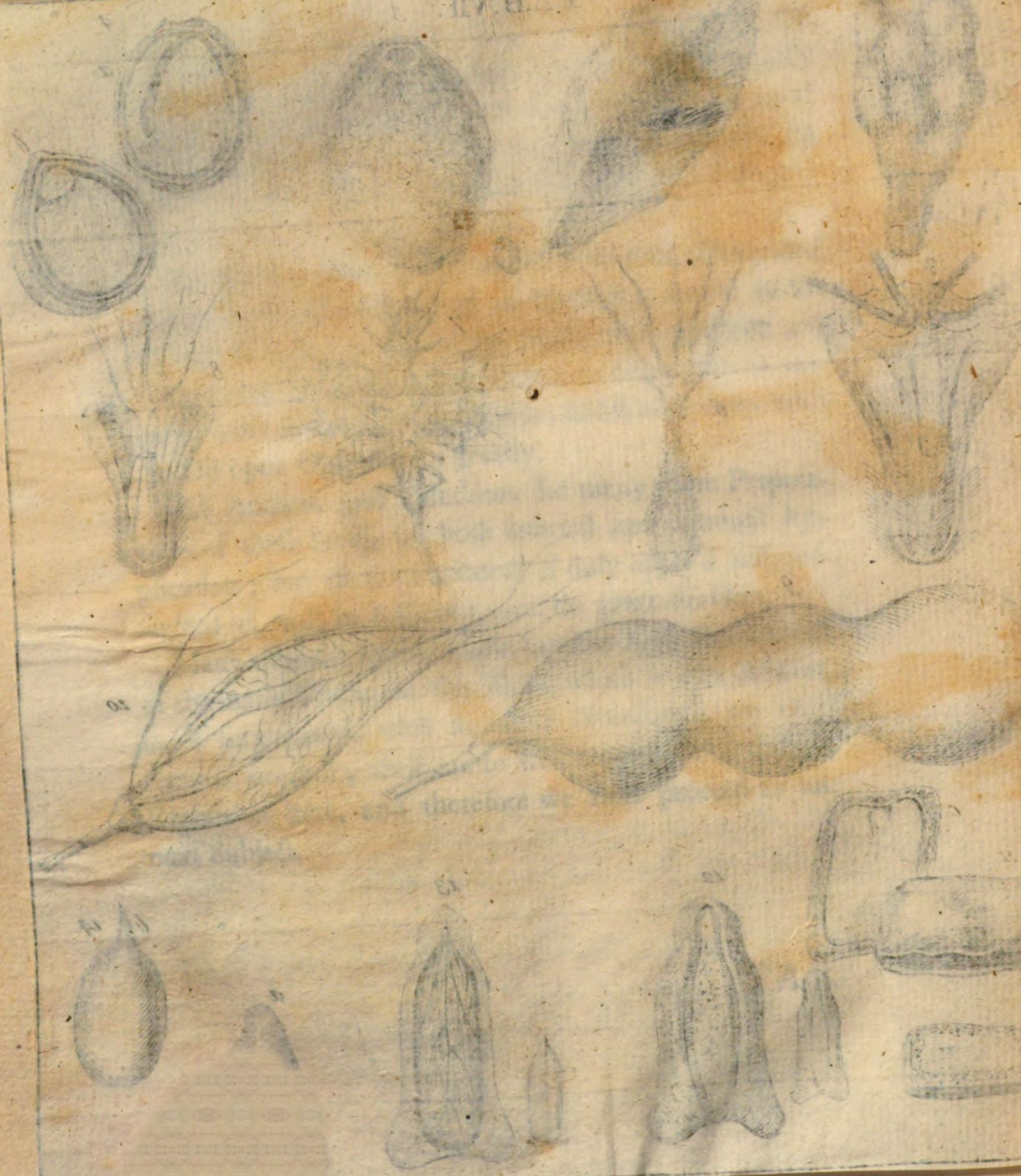
Old Authors give Directions for many more Preparations of these Seeds, for both internal and external Application; but these mentioned, if duly apply'd and persevered in, will be sufficient, and do great Services.

Many eminent Writers have run into high Encomiums of the many Virtues of this Plant, which it well deserves, as it furnishes us with so many Necessaries we daily stand in need of; these are so well known as to need no Repetition here, and therefore we shall proceed to our next Subject.

T A B.



T. B. VII.



T A B. VIII. Fig. 1. 2.

CITRUL SEED.

THIS Plant is called *Anguria* by some Botanists. I cannot find from whence it has this Name ; it is also called in *Latin* *Citrullus*, a *citreo colore*, says *Boerhaave*, from its yellow Colour. This is hardly a satisfactory Etymology, because the Fruit is not yellow. The *Dutch* call it *watermeloen*, whence the *Citrul* is by some with us called *Watermelon*.

SYNONYMA.

Citrullus, *Offic.* *Citrullus officinarum*, *Ger.* 769. *Emac.* 913. *Citrullus folio colocynthidis, secto, semine nigro; quibusdam Anguria, J. B. ii. 235. Citrullus anguria, tetranguria, Chab. 133. Anguria citrullus dicta, C. B. Pin. 312. Raii Hist. i. 643. Tourn. Inst. 106. Elem. Bot. 89. Hist. Oxon. ii. 228. Boerb. Ind. A. ii. 79. Rupp. flor. Jen. 43. Anguria sive citrullus vulgarior, Park. Theat. 771. Citrullus Jacea Brasiliensibus, Marcg. 22. Citrullus Jacea sive Anguria, Pif. 262.*

CHARACTER of Plant and Flower.

The Plant has many flexible, slender, viny Stalks, which are rough, and spread along the Surface of the Ground ; the Leaves are large, rough, and hairy, cut
into

into deep Jaggs ; the Tendrils arise from the *Alæ* of the Leaves, and the Foot-stalks also, which bear the yellow Flowers ; the Flowers are succeeded by a large round Fruit, the Rind of which is somewhat hard and smooth, of a dark Green-colour, mark'd with Spots of a very pale Green ; the *Pulp* or *Parenchyma* is like that of the common **Cucumber**, white, firm, and of an agreeable Taste. The Seed lies bury'd in the Center of the Fruit, as in other **Melons**. The Pulp in some kinds is red, which is more pleasant to the Taste than the other.

Gerrard says, “ The Fruit is somewhat round and streaked, or ribbed with deep Furrows, of a green Colour above, and underneath, on the Side next the Ground, something white ; that the outer Skin is very smooth, and that the *Parenchyma* is more like that of a Pompion than either that of the **Cucumber** or **Musk-Melon**. The Pulp which entertains the Seed is very slimy. *Matthiolum* says, the Fruit is not subject to rot or decay, if gathered in a dry Day and kept in Wheat ; but *Gerrard* says, according to his Practice they are best preserved in Sand, which will keep them a long time.

Tournefort mentions four Species of the **Citrul** ; others mention a Kind with a yellow Pulp and black Seed ; another with a red Pulp and larger black Seed ; another with a red Pulp and a small red Seed.

Gerrard has but two Species, the common which we have described, and another which differs from it only in the Fruit's being less, and having the Leaves not so deeply
agged.

jagged. *Tournefort's* Botanical Difference between these and other cucurbitaceous Fruits is, that this is eatable ; which is not a very just Distinction, because there are several of those daily eaten, not only by the *Americans*, but with us also. There is, besides these mentioned, one or two prickly Kinds of **Citruls**, one of which is mentioned in Sir *Hans Sloan's* Catalogue of the Plants of *Jamaica* : It is the *Cucumis Anguriæ folio latiore, aspero, fructu minore, candido, spinulis obtusis muricato*. This I take to be the *Anguria Americana fructu echinato eduli*, *Inst. R. H.* American Water-melon with a prickly eatable Fruit.

Most of these are cultivated in *Spain*, *Portugal*, and *Italy*, and other warm Climes, being much esteem'd among them for their cooling Quality.

MICROSCOPICAL Description.

Fig. 1. a. is a **Citrul Seed** of its natural Size ; this was a black Seed, but I have by me some yellow and some red, the Features of which are all alike, having not the least Difference except their Colour. I have also another kind, having the Ground dusky with white Streaks on both Sides, given me by the learned Dr. *Pocock*. In the Figure *b*, the Marks are more discernable, in which at the Top, on one Side, is a Slit hardly perceivable in the Seed, till augmented by the Help of the Microscope ; it is more particularly enlarged as at *Fig. 2. b.* wherein appears an Edge round it, and a white Substance protuberating in it longitudinally, having at one End a Depression like a superficial Hole, and at the other

other a Fissure ; this is the *Umbilicus* of the Seed. At the Side of this Slit the *Apex* of the Seed seems very blunt, and runs on each Side to an obtuse Angle, and running from thence a little way down, swells on each Side till it comes to a perfect Roundness at the *Basis*. Both Sides are alike, are rough and porous, having a thick Ridge some Distance from the Edge all round, conformable to the general Shape of the Seed.

Fig. 2. a. is the *Nucleus* taken out, which differs from its Case in Shape ; this is oval, only having a Point, which is the first Rudiment of the sprouting Plant. The Surface is covered with a delicate white Membrane, which, on Inspection with the Microscope, reflects several Colours much in the Manner of Mother of Pearl ; this answers only in some of the fullest and most perfect Seeds. The *Nucleus* is as pleasant as that of a Hazel-Nut to the Taste, and has no Smell.

V I R T U E S.

The Pulp of this Fruit is sometimes eaten raw, or boiled, by the People among whom it grows naturally in warm Countries ; but it is a cold watry Fruit, and therefore not to be eaten by us. The Seeds are among the four greater cold Seeds, and are therefore an Ingredient in cooling Emulsions when necessary ; but besides the Refrigerant Quality for which they have a Place among the greater cold Seeds, they are said to be *aperient* and *diuretick*, and of singular use in Medicines for a Strangury, or other Obstructions proceeding from any hot Cause.

T A B.

T A B. VIII. Fig. 3.

P O M P I O N S E E D.

PE P O the *Latin* Name, of Πεπών, which comes from Πεπαίvesθαι, *maturescere*, to ripen, being a Fruit that very soon comes to **Maturity**. Our *English* Name **Pumpkin**, is a Corruption of **Pompion**; what this is derived from I cannot find, if it is not from the Greatness of the Fruit, some of them being of a prodigious Size, and so esteem'd a *pompous* Fruit.

Pompions and **Melons** were by some Authors reckoned together as the same Kind of Fruit, differing only in Size; and *Matthioli* called the larger *Pepones*, and the smaller *Melopepones*. They are all, however, different Fruits, and deserve different Descriptions, which they shall have in their Places.

SYNONYMA.

Pepo, *Offic. Park. Parad.* 526. Pepo oblongus, *C. B. Pin.* 311. *Hist. Oxon.* ii. 26. *Raii Hist.* i. 641. *Tourn. Inst.* 105. *Elem. Bot.* 88. *Boerb. Ind. A.* ii. 78. *Rupp. flor. Jen.* 42. Pepo maximus oblongus, *Ger.* 773. *Emac.* 919.

CHARACTER of Plant and Flower.

The great **Pompion** has thick, rough, prickly Stalks, and many Claspers, with which they lay hold

on any thing near them for their Support; if nothing be near them they creep on the Ground, and extend themselves a great Way. The Leaves are large, very rough, and indented deeply, and serrated round the Edges. The Flower consists of one Leaf, which is Bell-shaped, expanded at the Top and cut into several Segments; of these Flowers some are *Male*, and some *Female*, as in the Cucumbers and Melons. The female Flowers grow upon the Top of the *Embryo*, which afterwards becomes an oblong or round fleshy Fruit, having sometimes a hard rugged or uneven Rind, with Knobs and Furrows, and is often divided into three Parts, enclosing flat Seeds.

The next to this is the great round *Pompion*, whose *Synonyma* are *Pepo vulgaris*, *Raii Hist.* 630. *Cucurbita foliis asperis*, five *Zuccha flore luteo*, *J. B.* ii. 218. *Cucurbita major, rotunda, flore luteo, foliis asperis*, *C. B. Pin.* 312. *Pepo maximus rotundus*, *Ger. Emac.* 919.

This Plant spreads wide with long, channell'd, creeping Stalks, having Claspers like the former to lay hold on any thing near it. The Leaves are of a dark shining Green, serrated and rough, hanging upon Pedicles five or six Inches long, which are furrow'd and prickly. The Flowers are of a Saffron Colour within, and downy; on the Outside of a yellowish Green, with greenish Veins, and somewhat hoary; the Chives, which stand in the Middle, represent in some Measure the Hoof of a Sheep,

Sheep, and the Fruit is sometimes of a prodigious Largeness.

Mr. *Miller* besides these, counts three more Species, which are the **Orange-shaped Pompon**, the **Pear-shaped Pompon**, and the **small spherical Pompon**; and *Tournefort* mentions fourteen Kinds in all, among which are those mentioned here. I must, with Mr. *Miller*, believe all the others only feminal Variations; so that to make a particular Title for every Shape we sometimes find in the Fruit of even the same Plant, would be endless; for this Author says, he has often experienced that the Seeds, taken from any one of the Sorts, will not continue the same three Years together, if sown in the same Garden.

Besides these *Gerrard* has two other Kinds, which seem to differ from every other Species mentioned by *Tournefort*, which we cannot omit here, being curious; the First is his *Pepo maximus compressus*, the great flat-bottom'd **Pompon**. The Flower of this, he says, is large and yellow like those of the others described; the Fruit is of a great Bigness, having its Bark full of little hilly Warts, like the Rind of the **Citron**, and is yellow when ripe. The Second is his *Pepo maximus Clypeatus*, the great **Buckler Pompon**; this differs very much from the others in the Form of the Fruit; the Stalks, Leaves, and Flowers differ not from those of the other Species, but the Fruit being neither long, nor round, is broad, and in a manner flat like a Shield or Buckler, thick in the Middle, and thin towards the Border, and

curled in certain Places about the Edges, like the rugged uneven Bark of the *Pome-citron*; the Rind is soft, thin, and white; the *Parenchyma* of a sufficient Firmness, the Seeds larger than that of the **Cucumber**, and much like it.

In order to compleat our Account of the real various Kinds of **Pompions**, we must not omit two others added by *Johnson* to *Gerrard's* Descriptions; which are, first his *Macocks Virginiani*, *five pepo Virgianum*, the **Virginian Macock** or **Pompion**.

The Root of this sends off rough cornered Branches, eight or nine Foot long, which are subdivided into others of a blackish Green-colour, creeping on, and covering a great Extent of Ground; the Leaves, Foot-stalks, and Claspers, are like those of the common **Pompion** (being full as large) as are also the Flowers; the Fruit grows always towards the Extremities of the Branches, is flat like a small Bowl, about four Inches long and three broad, and of a blackish Green-Colour when ripe. The Substance or *Parenchyma* is of a yellowish White-Colour, having in its Center the Pulp and Seeds like those of the **Pompion**, but a little smaller; and the Root consists of many white Ramifications, much extended on every Side, and perishes at the first Approach of Winter.

The other is what he calls *Melones aquatici edules Virginiani*, *Virginian eatable Water-Melon*. He says, this Melon, or Pompion Plant, is in all Respects like those of the common Pompion except in its Size. The Fruit is about four
Inches

Inches long, and three broad, like a large Apple; they grow from the *Alæ* of the Leaves, all along the Stalk, to the Tops of the Branches; the Meat, Pulp, and Seeds are like those of the common Pompion.

Before we proceed to describe the Seed of the Pompion, we shall consider the *Melopepo*, or **Squash**, in this Place, upon account of the Likeness of the Seeds to each other, which seems to me the surest Way of knowing the Relation these Plants have to each other.

It must also be remarked here, that *Tournefort* describes and gives the Figure of what he calls the *Melopepo*, which I should rather have taken for the great round Pompion, if he had not called it so. When we come to describe the Seed, we shall mention the Names of such others as have an Affinity to them, as they are now called by some of our Country Gardeners.

Melopepo is so called of *μήλον*, *Malum*, an Apple, or Melon, because its Fruit comes near to the Size of a Melon, and *Pepo*, a Pompion, because it participates of the Nature of that Fruit. As to the Word **Squash**, I know not its Derivation.

The Plant is said to be entirely like that of a Pompion or Gourd, differing only in its Fruit, which is roundish, fleshy, streaked, angular, and for the most part divided into five Partitions, inclosing flat Seeds adhering to a spongy *Placenta*. The Sorts of this Kind, are, 1. *Melopepo compressus*, C. B. the common or flat **Squash**. 2. *Melopepo fructu maximo albo*, the large white

white **Squash**, commonly called the white flat **Pumpkin**. (These perhaps are the two Particulars mentioned above from *Gerrard*) 3. *Melopepo fructu citriformis*, the Citron-shaped **Squash**. 4. *Melopepo verrucosus*, the warted **Squash**. 5. *Melopepo verrucosus, fructu & semine albis*, warted **Squash** with white Fruit and Seed. 6. *Melopepo flavescens folio aspero*, *Tourn.* yellowish **Squash** with a rough Leaf.

There are many other Sorts of these in *America*, which may also be counted rather seminal Variations than otherwise; for Seeds sowed from such Plants which grew upright, and did not produce Runners (as the more ordinary Sorts) the succeeding Year, were as luxuriant as any of the other Kinds, and the Fruit was of a different Shape, from those which the Seeds were taken from. This is the Account of *Mr. Miller*, whose Experience in these Matters is by me much relied on.

MICROSCOPICAL Description.

I have now before me the several following Seeds, which I took out of the Fruits myself, all which, with those of the Kinds we have now described, have the same Characters, and have no other Difference between them but in Size and Thickness; some being larger, some less, some more convex, and some flatter, and therefore all come naturally under the Description of the **Pompion Seed**.

The first and largest is that of the great **Pompion**. 2. The common **Squash**, which is next in Size. 3. Green ellip-

elliptical Calabash. 4. Variegated Calabash, with different Greens. 5. Lemon Calabash, commonly called Lemon Gourd. 6. Orange Gourd. 7. Elliptical golden variegated Calabash. These five last Sorts I had from my learned Friend Doctor *Smith*, the latter three of which have Seeds smaller than the other Sorts. 8. Long white Calabash. These are small, but somewhat rounder in the Basis than the former three Sorts, and flatter. 9. Elliptical Lemon-colour'd Calabash. 10. Fig-like green Calabash. These two are more round than any of the rest, and flatter.

Every one of these is cover'd in its slimy Bed in the Fruit, with an exceeding fine transparent white Membrane, which, when rubbed off, the Features are as follows :

Fig. 3. a. is a **Pompon Seed** no larger than it naturally is, being about an Inch long, and in the same Proportion as it appears delineated. In this may be observed a broad End and a narrow one ; the Latter is its *Umbilicus*, which is a long Opening as it appears magnify'd at *c*, at one End of which there appears a Hole running through the Shell or Husk of the Seed on one Side down to the Cavity wherein the Kernel lies : this is shewn in a little dark *Sulcus* at *b*. Near the Edge of the entire Seed *a*, a Line or Groove runs all round on both Sides, which is conformable to the exact Shape of the Kernel ; *b* is one half of the Kernel and Shell, made by a longitudinal Section from the *Apex* to the *Basis*. In the Kernel there appear'd several fine Ramifications dispersed through

through the whole Kernel, which probably may be the Rudiments of the Branches of the Plant; the Kernel is as agreeable to eat as that of a Hazle Nut.

VIRTUES.

The *Parenchyma* of the two first Sorts of **Pompions** is both Meat and Medicine; *Boerhaave* says, it is excellent Food boiled in any Kind of Broth; but if its Use be too constant it is apt to relax the Intestines. He commends its use in bilious Habits of Body; and as a refrigerating Emollient. I have known it scraped into Milk and boiled like Rice-Milk, and season'd with Sugar and Spice, which makes a good cooling and moistening Diet for dry Constitutions, where the Flesh feels hot and rough. In *America* these are more frequently used as Victuals than with us; yet we often prepare it for the Table many Ways; some, when they are ripe, cut them open and take out the Seeds with their slimy Pulp and Membranes, and put in sliced Apples, Sugar, and Spice, which they mix intimately with the *Parenchyma*, and so bake it in an Oven. It makes an agreeable kind of Pye, and is nourishing; yet it is best for such as lead active Lives, or work hard; for there are some Stomachs that perhaps might not bear or digest it very well. Another Preparation of this Fruit I find in a *German* Author, whereby it becomes not only an agreeable, but a wholesome Sweet-Meat for cooling the Mouth and Stomach. " Slice an unripe **Pompion** lengthways in pretty
" long Pieces; let them lye in Vinegar some Days;
" pour

“ pour off the old Vinegar, and put fresh to them, let-
 “ ting them lie in it some Days longer ; then take them
 “ out and dry them ; then make a Syrup of fine Sugar,
 “ and boil them sufficiently in it, adding Spices at Plea-
 “ sure, over a slow Fire, keep them in the Syrup for
 “ use.

If the ripe Fruit be sliced and fried in a Pan with Onions and Butter, or Oil, it makes an excellent emollient Diuretic in Stranguries, proceeding from an Inflammation brought on by over Exercise, and is also nourishing Food.

T A B. VIII. Fig. 4, 5.

COLOQUINTIDA, or *Bitter-Apple* SEED.

THE *Latin* Name, *Colocynthis*, comes from the *Greek* Word *Κολοκυνθίς*, which is composed of *Κοιλίαν κινεῖ*, it moves the Belly, or of *Κυῶν*, *Canis*, a Dog, and *Κόλον*, *Cibus*, Food, Dogs-Food, as being counted, by way of Antipathy on account of its Bitterness, only fit for Dogs. The *Arabians* called this Fruit, *Chandel*, *Handel*, *Handhal*, or *Albandola*. *Bitter Apple* is an Appellation taken from the Shape of the Fruit, and its excessive Bitterness.

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SYNONYMA.

Colocynthis, *Offic. Ger. Emac.* 915. *J. B.* ii. 232. *Chab.* 133. *Raii Hist.* i. 642. *Colocynthis vulgaris*, *Park. Theat.* 160. *Colocynthis fructu rotundo minor*, *C. B. Pin.* 313. *Tourn. Inst.* 108. *Chomel.* 67.

There is another sort called by most of the above-cited Authors, *Colocynthis fructu rotundo major*; and *Tournefort* reckons twelve Species of this Fruit, which are not of much Moment to be acquainted with, as being only for their Variety to be preserved in Botanical Gardens, and being Inhabitants chiefly of some Parts of the *East* and *West-Indies*. The first Sort is said to be brought from *Alepo*, and the latter from some Parts of *Asia*.

CHARACTER of Plant and Flower.

This Plant bears hairy, rough, streaked Stalks, which spread and creep along the Ground; the Leaves stand singly at certain Intervals, upon Foot-stalks two or three Inches long; they are rough and hoary underneath, marked with Spots, jagged and cut in the Form of a Citrul Leaf, but the Divisions smaller. The Claspers and Flowers shoot at their Foot-stalks; the Flowers are Yellowish, and are succeeded by a round Fruit, which is at first Green, afterwards turns Yellowish, having a rank Smell. The outer Rind is taken off by the People with whom it grows; the Pulp is white, spongy, light, and intolerably bitter, containing six Rows of Seeds.

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The Plant is bitter in all its Parts as well as the Fruit, is said to be sown in Spring, and the Fruit to be ripe in *August*. *Gerrard* says, he has often been informed that the *Colocynth* grows in common on the sandy Sea Shore in many Places of the *Mediterranean*, especially on the Coast of *Barbary*, and near *Sancta Crux*, from whence (he says) great Quantities have been brought from time to time. This Author describes another Kind whose Fruit is shaped like a *Pear*, there being no other Difference between it and the former.

MICROSCOPICAL Description.

The Seeds of *Colocynth* are shaped like an Egg, as at *Fig. 4.* smaller at one End than the other, only being depressed on the Sides, which makes it somewhat flattish, altho' it is yet thicker than the Seeds of Cucumber or Melon; the natural Size of it appears in the small Figure near it. These Seeds are of a white, and some of a brownish Olive-colour, but are all of a Size; the *Umbilicus* is at the smaller End, consisting of a small Slit. The *Husk*, or Shell is very strong, and contains a Kernel nearly of the Figure of the whole Seed. I tasted the Husk and Kernel separately, and both were excessively bitter; but the latter in a less Degree than the former. The Surface is smooth and porous. *Fig. 5.* shews two Rows of the Seeds, sticking by their smaller Ends, in their natural Situation, in a Piece of the spongy Substance.

VIRTUES.

This is a most powerful Purger of watery and pituitous Humours, from the most remote Recesses of the Body, as from the Brain, Nerves, Joints and Lungs; and therefore held good in Head-Achs of all Kinds proceeding from such Causes; Apoplexy, Epilepsy, Vertigo, old Coughs, and Difficulty of Breathing, together with cold Infarctions of the Joints, and Anasarcal Disorders. But it is said to be so violent in its Operation as to endanger an Abrasion of the Guts, and consequently bloody Stools. Hence many Authors were puzzled from time to time in endeavouring to find a proper Corrector for it. *Monsieur Bolduc*, who was in my Time Demonstrator in Chymistry under *Monsieur Lemery* at the King's Garden at *Paris*, made many Essays to this Purpose, to whose Account laid before the Accademy of Sciences I refer the Reader, who may find it also in *Quincy's Dispensatory*, p. 195. However, it has been received and prescribed in several Forms with undoubted Success, and without producing any of those ill Effects dreaded by many Writers. An Extract called *Extractum Panchymagogum*, has it as a principal Ingredient, see *Quincy's Dispensatory*, p. 547. An Extract of *Colocynth* alone is made in white Wine, the Dose from four Grains to six. It is an Ingredient also in the *Confectio Hamech*, *Pil. ex Euphorbio*, and one of the two Ingredients that make the *Pil. ex duobus*. In this last Form nothing has been oftener prescribed, nor is there a better in the Shop. It
has

has been censured as a Purge capable of tearing the Constitution ; but this arose from the too frequent use of it in virulent Gonorrhœas, at very short Intervals. But nothing is more safe, nor a better Purge, which I have often experienced, when suited to the Constitution and other Circumstances under a Physician's Consideration. I must relate one Thing which makes me think an Infusion of **Colocynth** in some soft Vehicle, would be the best Manner and safest Way of using it. A Man, well known to me, who had a virulent Clap, was advised by a Friend to steep some **Bitter Apple** all Night, in a Pint of cold Ale, with a little Ginger, and strain it off next Morning ; he accordingly bought a Pennyworth (how much he got for his Penny I cannot tell) steeped it, and drank the Infusion next Morning ; it worked him, as he informed me, with as much Ease and Safety as any other Purge he had ever taken, and procured him seventeen Stools. He repeated it twice or thrice more, and was actually cured of his Disorder. He said he knew several that had cured themselves in the same Manner.

Before we quit this Subject, one Form more must be mentioned, which is the *Troches Albandal*. Of this Medicine (before it went through the great Alteration of lessening the Quantity of the **Colocynth**, from ten Ounces to six Drams) *Rulandus* made an Improvement, by digesting half an Ounce of the *Troches*, in ten or twelve Ounces of the *Spirit*, distilled from *Malmsey Wine*, for some Time, and filtrating it for use. The Dose was from two Drams to an Ounce, or an Ounce and half ;
this

this he extols in his *Centuriæ* in many Places for evacuating easily and safely, all kinds of Humors, and curing many Diseases which required purging, repeated every third Day, according to the Nature of the Case, and calls it from its Efficacy, his *Spiritus vitæ Aureus*, or golden Spirit of Life. This filtrated Spirit he sometimes inspissated to a thick Consistence, and gave it in any convenient Vehicle from half a Scruple to one Scruple for a Dose, with the same Success.

T A B. VIII. Fig. 6. 7.

The *Cajous*, *Cashew*, or *CASSU NUT*.

THIS Nut is called in Latin, *Anacardium occidentale*, to distinguish it from the Oriental, which is more properly called by that Name, because it is shaped like the Heart of a Bird, whereas the former is more of a Reniform. But it was probably called so, because it abounds with a Caustic Oil confined between the two *Laminæ* of the Shell, like that of the true *Anacardium* of the Shops. This shall be described hereafter.

SYNONYMA.

Anacardium occidentale, *Jonsf. Dendr.* 156. *Anacardium occidentale*, *Cajou*, *Mont. Exot.* 9. *Anacardium occidentale Cajous dictum*, *officulo reni leporis figura*,
Herm.

Herm. Cat. Hort. Lugd. Bat. 36. *Com. flor. mal.* 15. *Anacardii alii Species, C. B. Pin.* 512. *Herm. Mus. Zeyl.* 37. *Anacardus Zeylanica, folio nucis juglandis, Cajous, Kaghu. Herm. Mus. Zeyl.* 55. *Cajous, Ger. Emac.* 1544. *Park. Theat.* 1658. *J. B. i.* 336. *Chab.* 24. *Acajou, Tourn. Inst.* 658. *Boerb. Ind. A. ii.* 262. *Arbor Acajou, vulgo Cajou, Pis. Mont. Arom.* 193. *Acajaiba & Acajuiba, Brasiliensibus, Marcg.* 94. *Kapamara, Hort. Mal. iii.* 65. *Tab.* 54. *Pomifera seu potius Prunifera Indica nuce reniformi summo pomo innascente, Cajous dicta, Raii Hist. ii.* 1694. *Cat. Jam.* 187. *Sloan. Hist. ii.* 136.

CHARACTER of Tree and Flower.

The Tree is of a middle Size, with a thick Trunk; the Bark of an Ash-colour without, and Purple within, of a subacid Taste, adorned with dark green Boughs, diffused elegantly in an orbicular Manner.

The Root is white, with many slender Filaments. The Leaves are placed without Order, of an oval Form, shining and smooth, with Nerves running from the Middle towards the Sides. The tender Leaves rubbed a little, are glutinous, and have a fragrant Smell, and the older Leaves grow yellowish before they fall off.

The Flowers are sweet-scented, growing at the Extremities of the Branches, and from a little green *Calyx*, grow into five acuminate *Laciniae* or Jags, with fine slender reflexed greenish Yellow Leaves, which afterwards become of a deep Yellow, and at last Purple, having

having *Stamina* with yellow *Apices*, in the Middle of which, a *Stilus* arises from the *Germen*.

The Fruit is about the Size of a Pear, first a brownish Yellow, then Green, and at last entirely Yellow. The *Parenchyma* is of a greenish Yellow, spongy and watry, covered with a thin Skin. It has a sweet Smell and an austere vinous Taste, when not quite ripe.

While the Nut ripens, between it and the Foot-stalk there swells a little Protuberance, growing as big as a small Pear, which gave Occasion to *Piso's* Description, seemingly contradicting that Figure, on the great End of which is this Nut.

There are many Woods of the Trees in *Brazil* near the Shore, being naturally produced there. The *Gum* of the Tree is produced in great Plenty, and like the *Gum Arabic* in Colour and Quality. It is said, that in *Brazil* the Inhabitants make War for the Nuts, the Conquerors pitching their Tents where they grow, and living on them till they are all eaten. They ripen once a Year, whereby the *Indians* reckon their own Ages. The Nut, although large at first, before the least Sign of the Fruit appears, yet increases a little with the Growth of the Fruit, and does not decrease, as *Acosta* would have it.

It must be observed, that the Nut immediately succeeds the Flower, and grows almost to its utmost Size before any Sign of the Fruit appears; and that when the Nut is become so forward, a little Protuberance begins between the Pedicle and the Nut, which by Degrees
growing

growing larger, thrusts the Nut from the Pedicle, and bears it upon its own Head.

MICROSCOPICAL Description.

Fig. 6. shews the Nut growing upon the Top of the Fruit as was before observed. When it is pulled off, the Vestige of the Pedicle to which it adhered upon the Fruit, appears at the bigger End, as at *Fig. 7.* In the entire Nut may be considered its *Umbilicus*, which consists of a round yellow Depression, sinking into *Sinus's* on both Sides, and forming a Notch, whereby the Nut (which otherwise would be of an oval Form) is reduced to the Shape of a Kidney. It rises protuberant from thence on both Sides, and has, in most, certain Lines upon the Surface of the Shell, which, in many, may be counted Ridges, radiating from the *Umbilicus* circularly towards the Back in a Direction to humour the natural Shape of the Shell. As to their Colour, some incline from an Olive to an Ash-colour, others to a Brown; and as to their Bigness, some are larger and some smaller than this Figure.

Fig. 7. shews one half of the Shell cut down longitudinally, in order to demonstrate the Cavity wherein the Kernel lies, and the Thickness of the Shell. The internal Surface is of a dark Brown-colour, and radiated superficially as the Outside. The Shell consists of two Tables and a cellular Substance between them, exactly like the Structure of the Bones of the Scull. This is the Receptacle of that acrimonious Caustic Oil so famous for burning

the Lips or Mouth of any one it touches, and for burning over a Candle with a fierce Flame and great Explofions, till all the Oil is consumed. The Kernel is always in close Contact with the Shell, and consequently is shaped exactly like the Cavity; it is covered with a thin brown uniform Membrane, which being peeled off, there is scarce any Difference between it and a blanched Chefnut, as to its Taste and Goodness. This brown Membrane is beautifully mottled or streaked, and is analogous to that which covers the Hazle-Nut; sometimes this Membrane is of a whitish Ash-colour, and then it is more hard and shelly, and the Kernel seemingly more ripe.

Next to this Figure at *a*, the Kernel appears, at whose Extremity a little protuberant oblong Lump adheres, which is the *Germen* of the Tree. Its first rudimental Leaves lie between the two *Laminæ* of the Kernel, and its Body is quite detach'd; *b.* is that *Germen* a little enlarged, and is an entire Body having no manner of Communication with the *Kernel*, by Vessels or Fibres, only having its Leaves entertained as just mentioned; of which there are four, three come into view in the Figure, and the other is on the opposite Side, and all the four rise and meet at the Top in a Cone. In several I have examined, the Light appears between their Roots.

V I R T U E S.

The Kernels of the Nuts, besides being wholesome and pleasant to eat, are esteemed among the *Indians* powerful in promoting Venereal Desires, for which
Pur-

Purpose they eat them in plenty. They either roast the Nuts in Embers in order to burn and dry away the Caustic Oil from the Shells, or, after opening the Nuts, steep the Kernels in Water to loosen the Membranes which cover them, that they may be the easier blanch'd and prepared for eating. They sometimes make a Sweet-Meat of the Kernel.

The Fruit is very Cooling, eaten in hot Weather; and its Juice is said to cure Diarrhœas, of which they sometimes make Wine.

The Gum is made use of by Painters; and the Bark is used to dye Cotton Yarn, which boiled with some Copper in Water till a considerable Quantity is consumed, is held as a speedy Remedy for healing old *Ulcers*, by washing them with it; and the Caustic Oil is said to be good to take away Corns, or other hard Excreffences of the Feet or any other Part.

T A B. VIII. Fig. 8. *a, b, c, d.*

GOAT'S-BEARD SEED.

TRAGOPOGON in *Latin*, from *Τράγος*, *Hircus*, a Goat, and *Πώγων*, *Barba*, a Beard; because the *Aristæ* and downy Crowns of the Seeds have some Resemblance to a Goat's Beard. This Plant is

also called *Sassifrica* from *Saxifraga*, the Name of another Plant, for what Reason I cannot say ; whence it is sometimes called *Sersify*, *Salsaffy*, and in our Seed-Shops *Sassify*. It is also called *Joseph's Flower*, *Star of Jerusalem*; because the Flower has a Starry Look when the Leaves are expanded ; and *Noontide*, or *Go to Bed at Noon* ; because the Flower is said to close itself up at Noon, and remain so till next Day's Morning Sun causes it to open again. It is also called *Artifi* by *Casp. B.*

SYNONYMA.

Tragopogon, *Offic. Chab.* 331. *Park. Parad.* 514. *Tragopogon luteum*, *Ger. Emac.* 735. *Raii Hist.* i. 252. *Synop.* 76. *Tragopogon pratense luteum majus*, *C. B.* 274. *Hist. Oxon.* iii. 79. *Tourn. Inst.* 477. *Herb. Par.* 157. *Dill. Cat.* 91. *Boerb. Ind. A.* 90. *Buxb.* 392. *Tragopogon flore luteo*, *J. B.* ii. 1058. *Tragopogon luteum majus*, *Schw.* 209.

CHARACTER of Plant and Flower.

The general Character of the Flower from *Tournefort* and *Mr. Miller* is, " that it is a Plant with a semiflosculous Flower, consisting of many half Florets ; these with the *Embryos* are included in one common many-leaved Flower-cup, which is not scaly, but the Segments are stretched out above the Florets ; the Embryo's afterwards become oblong Seeds inclosed in Covers or Coats, and have a thick Down like a Beard, adhering to them."

The

The Plant has hollow smooth Stalks, of a whitish Green-colour, whose Leaves have a large pointed Rib down the Middle, like those of **Garlick**, which are full of a milky Juice; from the *Alæ* of these, others like them grow, but smaller. The Flowers grow at the Tops of the Stalks, consisting of purple or yellowish Leaves, inclosed by nine or ten sharp-pointed green Leaves; the whole resembling a Star, as we said before, when spread out. When they come to their full Maturity, they become a large downy *Blow-Ball* like those of **Dandelion**, which carry the ripe Seed away with the Wind.

The only Difference between the Purple and Yellow-flowered **Goats-Beard**, is, that the Yellow has not such long green Leaves to adorn it as the Purple.

Tournefort reckons twelve Species of *Tragopogon* from several Authors, differing from each other only in their Leaves, some being like those of Grass, others having Leaves resembling those of Leeks, &c. a particular Summary of which is not necessary here; *Johnson* however mentions one Kind more of this Plant, having a thick Root full of a milky Sap, which produces many Leaves spread upon the Ground, long, narrow, and thin, resembling Grass, but somewhat stronger; from these arise tender Stalks, bearing on their Stalks double yellow Flowers somewhat less than those mentioned above; he calls this *Tragopogon minus angustifolium*, which I am inclined to believe is the *Tragopogon pratense luteum minus* of *Mor. H. R. Bles*.

The three Sorts common here, or propagated for the Beauty of the Flower, or for Kitchen use, are those
which

which Mr. Miller mentions: 1. *Tragopogon pratense luteum majus*, C. B. Pin. Greater Meadow Goats-Beard with a yellow Flower; this is the second of Gerrard, described above. 2. *Tragopogon purpureo-ceruleum porri folio, quod Artifi vulgo*, C. B. Goats-Beard with a Leak Leaf, and a purple blue Flower, commonly called Salsify or Saffasy. 3. *Tragopogon alter gramineo folio suave rubens*, another Goats-Beard with a Grassy Leaf and soft red Flowers.

The first sort of these grows wild in moist Meadows in most Parts of *England*; and in *May*, when the Stems begin to advance, People gather them to boil, and prefer them to *Asparagus* for eating. The second sort was formerly more in Esteem than at present; 'twas brought from *Italy* and cultivated in Gardens for Kitchen use, the Roots having been greatly valued by many; now it is only in the Gardens of some Gentlemen for their own private Tables, very little being brought to Market at present. The third Sort is only kept for the Variety of its Flowers. The Shoots of the yellow sort are fit for use in *April* or *May*, according to the Forwardness of the Season; the best Time to cut them is when their Stems are about four Inches long; for if they stand too long they grow less tender.

MICROSCOPICAL Description.

Fig. 8. a, is the Seed of one of the Species of Goats-Beard above described, being drawn but very little bigger than it naturally is; that Part of it, which may be called the very Seed, reaches more than a third of the whole Length from the Bottom to that End which sustains

sustains the pappous Head or Beard; the rest is only a Pedicle or Stem, which serves to convey Nourishment to, and support the Head, till it is capable of carrying off the Seed to a distant Place. The Surface of this Seed is yellowish when ripe, and by lying will obtain a darker Hue; it is striated or ridged longitudinally, and more or less studded with little Protuberances, as it appears enlarged by the Microscope at *c*. At the Bottom of each Seed there is an Opening designed by Nature to facilitate the Extrusion of the *Radiculi* of the Plant; and as to its *Umbilicus*, from which the first Principles of the Plant are protruded, any part of the Stem running up from the Body of the Seed, wheresoever it chances to be first broken, serves for that Purpose, being tubular all along from the Seed to the Head or Beard, as appears at *Fig. e*.

b. is a Seed of another Species, not so large as the former, but of the same Form, only differing in the Beard, having only five *Aristæ*, which are short, and have but very little Down upon them; whereas the former has many *Aristæ* in a Tuft, whose Sides are filled with downy Fibres clinging to one another.

d. is a longitudinal Section made thro' the whole Seed, whereby the Kernel comes in View, and the Thickness of the Husk in proportion to it; the End of the Kernel runs to a slender Point downwards, and is concealed in the open Place ready to spring forth at the first Access of Nutrition to it; and the other End also runs to a Point, as appears by this Figure.

VIRTUES.

The Roots of *Goats-Beard* boiled in Wine and drank twice or thrice a Day, are very good for Stitches and pricking Pains in the Sides, and also for promoting Urine in Stranguries; and if they be boiled tender in Water, and eaten with melted Butter like Parsnips, they are very good and nourishing Food, and more agreeable than either Parsnips or Carrots, without being accompanied with Wind, as those Roots are. In this Shape they are great Restoratives, to be constantly eaten by those who are emaciated by long Sickness, or for consumptive Persons. They are said, by *Boerhaave*, to have much the same Virtues with the *Scorzonera*, of which we shall speak in the next Number; they are emollient and discutient, and outwardly apply'd are good to promote Suppuration; internally they attenuate Phlegm, and are good to promote Expectoration, therefore good to be constantly used in Asthmatic Coughs and Wheezings. These and the *Scorzonera* Roots are extolled for their Efficacy against the Bites of venomous Creatures, and for curing *Melancholy*, *Epilepsies*, and *Vertigo*. They are however only now received as Alexipharmics in Shops, and not often order'd even in that Intention: Infusion or Decoction seems the best Way for their Administration, but these Forms being now shamefully neglected, many excellent Medicines are out of use, and their Benefit to Mankind lost. These Roots have a Character for promoting the happy Eruption of the Meazles and Small-Pox.

T A B.

T A B. VIII. Fig. 9.

FERN SEED.

FILIX, the *Latin* Name of the Plant, comes from *Findo*, to cut or divide, the Leaves being deeply cut or indented. The *Greek* Name is Πτέρις, from Πτερόν, *Ala*, a Wing; because the Divisions of the Leaves of this Plant are like Wings on each Side of the Stalk. This is the general Name for the *Fern*, and according to *Matthiolum in Diosc.* is put for the *Male Fern*. The Female Fern is therefore distinguish'd by the *Greek* Appellation Θηλυπτερίς, *Filix Fæmina*, from Θήλεια, or Θῆλυ, *Fæmina*. Our *English* Name seems to have its Rise from the *Saxon* Word Feapn.

SYNONYMA.

We shall here, in giving the *Synonyma* and *Character* of the *Fern*, have regard only to the *Male* and *Female*; whosoever would be informed of the vast Variety of them must have recourse to *Plumier's Account of American Ferns*, and *Sir Hans Sloan's Natural History of Jamaica*, where the Curious may be gratify'd.

MALE FERN.

Filix mas, *Offic.* *Ger.* 969. *Filix mas vulgaris*, *Park.* 1036. *Raii Hist.* i. 143. *Synop.* 47. *Buxb.* 112. *Filix mas non ramosa*, *pinnulis latis, densis, minutim dentatis,*

Ger. Emac. 1129. *Filix non ramosa dentata*, *C. B.* 358.
Hist. Oxon. iii. 578. *Tourn. Inst.* 536. *Elem. Bot.* 428.
Dill. Cat. 103. *Boerb. Ind. A.* 26. *Filix vulgo mas dicta*,
five non ramosa, *J. B.* iii. 737.

FEMALE FERN.

Filix Fœmina, *Offic. Ger.* 969. *Emac.* 1128. *Raii Hist.* i. 149. *Synop.* 49. *Buxb.* 113. *Filix fœmina vulgaris*, *Park.* 1037. *Filix ramosa major pinnulis obtusis non dentatis*. *C. B.* 357. *Tourn. Inst.* 536. *Elem. Bot.* 428. *Filix major & prior trago, seu ramosa repens*, *J. B.* iii. 735. *Filix ramosa repens vulgatissima*, *Hist. Oxon.* iii. 583. *Thylypteris*, *Dil. Cat.* 174.

CHARACTER of Plant and Flower.

Johnson describes four Sorts of the **Male Fern**; 1. *Filix mas ramosa pinnulis dentatis*, Branched **Male Fern** with indented Wings. 2. *Filix mas non ramosa, pinnulis latis densis minutim dentatis*; unbranched **Male Fern** with large thick Wings minutely indented. 3. *Filix mas non ramosa pinnulis angustis raris profunde dentatis*; unbranched **Male Fern**, with narrow slender Wings deeply indented. 4. *Filix mas non ramosa pinnulis latis auriculatis spinosis*; unbranched **Fern** with broad prickly auriculated Wings.

The Roots of the first consist of many black hairy Fibres at the beginning of Spring; the Leaves may be perceiv'd growing from their folding Clusters, covered with brownish Scales, very closely joined together. A young
 Plant

Plant has but few Leaves, an old one twelve or more, each before it is an Inch long, having some of those fibrous Roots for its Support. The Leaves, when full grown, may be said to consist of a Stalk and Side-Branches growing from it, and a Nerve which bears the little Leaves. The Stalk is from one to four Foot long, full of brownish Scales towards the Root, one Side flat, the other round, above a Foot without Leaves or Branches. The third Pair of Side Branches is the longest, from which every other Pair grows shorter and shorter towards the Top, till they end in an *Apex*; they are about twenty Pair upon the longest Side-Branch. The little Leaves grow generally by Couples on the Nerve, each having eight or nine Pair, snipt on the Edges and ending in a sharp Point, of a deep Green on the upper Side, and paler on the under; each having two Rows of dusty red or brownish Scales. Towards the Top of the main Stalk those Side-Branches change into Nerves, bearing only the little Leaves.

The Leaves of the second Sort are of a yellowish Green on both Sides, set very thick and close together on the Nerve, with very small Nitches on their Edges, and round Tops; each Leaf has also two Rows of these dusty Seed-Scales. This sort grows in shady Woods and Copises, and resembles *Gerrard's* first Figure.

The Leaves of the third Sort are of a deep Green, not so closely set together on the Nerve, deeply indented on the Edges, and ending with a blunt Point; this has also the same kind of Dust, and grows in shady Places.

U u 2 The

The Leaves of the fourth Sort are a deeper Green than either of the two latter just described, not closely set together ; each having on the furthest Side from the Stalk, a longish Ear or Process ending in a Prickle like a Hair, as doth also the Top of the Leaf: Some of the Sides of the Leaves are also nicked, ending with the same Kind of prickly Hair ; they have also the Dust mentioned above, and grow on shadowy moist Rocks. This perhaps is the *Filix mas aculeata major Baubini*, says *Johnson*.

The **Female Fern** is described by *Gerrard*, whose Words, as they are remarkable with regard to the Stalk, and but short, will be curious : “The **Female Fern** has neither Flowers nor Seed, but one only Stalk, chamfered, something edged, having a Pith within of divers Colours, the which being cut aslope, there appeareth a certain Form of a spread Eagle. This Figure is taken Notice of in *Boerhaave's* History of Plants of the *Leyden* Garden. About this stand many Leaves which are winged, and like the Leaves of the Male Fern, but lesser. The Root is long and black, and creepeth in the Ground, being now and then an Inch thick, sometimes less. This is also of a strong Smell, as is the Male.” This Author's Description of the **Male Fern**, being much the same with the above, we have purposely omitted it here ; this however is to be observed, that he acknowledges a *fine earthy-colour'd Dust or Spots* on the Backs of the Leaves, which, says he, many rashly have taken for Seed. Both these Kinds of **Fern** wither away in Winter, and in Spring new Leaves shoot up, which continue green all the Summer.

MICROSCOPICAL Description.

There is a Class of Plants which produce no Flowers, yet have Contrivances for bringing forth Seeds either in the Leaves or other Parts, ordered by the all-wise and powerful Creator of all things, whose Care for his Creatures is no where more manifest than in this seminal Provision stored up for the Continuation of every Species of Vegetable, and especially in those particular Plants, which all Authors, till very lately, thought were without any.

Prince Cæsius, a most ingenious Botanist, and, if I remember right, the Founder of the famous *Lyncean Academy* in *Italy* (which flourished in the Time of *Galilæus*, *Johan. Faber*, *Fabius Columna*, and many other great Men, who were Members of it) was the first who had a Suspicion that such Plants as were before thought Seedless, were furnished with them; and as he knew they produced no Flowers, the usual Forerunners of Seeds, he considered them with the naked Eye only, and first called them *Plantæ Tergifoetæ*, Plants bearing their Seeds on their Backs, a Thought equal only to such a great *Genius*, whose whole Life was spent in searching into and contemplating the Works of the divine Creator. His Surmise was soon after confirmed by the Assistance of the Microscope, which the Members of that Academy made daily use of; it was however enough for him to have informed the World of the Existence of those Seeds; for it is but now we have arrived at the true Knowledge of their Receptacles, Structure, and Manner

Manner of Production. *Cæsalpin*, notwithstanding this Information from that great Man before him, run into an Error concerning these Seeds, in imagining the soft farinaceous Down that appears upon the tender Plants just coming up, was what produced new Plants; but this will appear to have no Share in that Production when we describe the true Seeds by and by; a Word or two however, of *Tournefort's* Notion, will not be amiss here. This Author has exhibited a microscopical Figure of the **Fern Seed**, whereby it appears, that he places upon each Division of the Leaf six or seven Figures in a methodical Order, two and two, of Kidney-Shape; he compares them to a Horse-shoe, and says, when their Membrane is corrugated, then a numerous Congeries of oval Vesicles appears in each. It is most certain that no such particular Kidney-shaped Cell contains the Seeds of this Plant, nor any such methodical Order in their Situation. The following Description will clear it.

Fig. 9. a. is a Piece of a Leaf consisting of two of the *Pinnulæ* on each Side, and its *Apex*, enlarged by a considerable Magnifyer. The Edges of the *Pinnulæ* appear thick and protuberant in proportion to their Size; within the Edges of which, an innumerable Quantity of little reddish brown Grains appear, sometimes covering the Surface of the Leaf all over, and sometimes only the Sides next the Edges, leaving as it were a *Sulcus* in the Middle; they lie in Heaps without Form or Method in their Position.

b. is

b. is one of those Grains further enlarged by my greatest Magnifyer, and appears to be a *Capsula* growing upon the Surface of the Leaf by a Pedicle which is of a membranaceous Contexture. This Figure appears full of Seeds, which seem protuberating through their Covering or *Capsula*; and the Hoop that surrounds it, is flat, having transverse *Striæ* alternately light and dark all round.

c. is a Side-View of another Pod or *Capsula*, wherein only the Side or Edge of the Hoop appears; this Hoop is a kind of Spring, which is elastic and supple while Green; but when the Seeds approach to a Ripeness, and consequently drier, these Springs begin to grow stiff, and, favoured by their Structure, straiten themselves up, tearing open the *Capsula*, to let the Seeds fall out, which is done suddenly, whereby the Seeds are cast off to a considerable Distance.

These *Capsulae* being so minute, and a Side-View of them being the most frequent that turns up among the Dust we scrape off upon our Object-Glass, gave Occasion to a Mistake or Deception in some very accurate Observers lately, who seeing only the Edge of the Hoop or Spring just mentioned, as at *c*, imagined that this was the Seed-Vessel, and that what it surrounded was only a Membrane analogous to a *Mesentery*, which served only to keep it in that circumflexed Form for a Time; but by a very strict Examination, I find that cannot be the Case, for these Reasons: 1. I was so fortunate as to shew the *Capsula* open with the Seeds tumbling out. 2. The Spring is flat, as at *b*. 3. The Size of the Seeds, *d*.
out

out of the Vessel, are three times larger than the Spots in the Spring. 4. The Glass Plate on which they lye, is full of the Seeds, the Pods torn open, and yet the Springs remain with the same Appearance of Light and Dark as before. This I hope is the Truth, and what appeared to me after many Observations, both alone and in Company with other curious Gentlemen, among whom was my ingenious Friend, Mr. *Henry Baker*. I must also remark here, that the Pedicles upon which these Pods grow, were never before taken Notice of that I can find.

VIRTUES.

The Virtues of both the *Male* and *Female Fern* are pretty much the same; they are great Strengtheners. A Decoction of the Roots and Plants is excellent to foment the rickety Limbs and Joints of Children, and other Diseases proceeding from a relaxed Habit of Body. An Infusion made in Water of the Leaves, is good against the Eruptions of Scorbutic Humors, and immoderate Hemorrhoidal or menstrual Discharges. The Decoction of the Leaves is good in Diseases of the Breast, and its distilled Water is esteemed a Specific against Worms. In the abovementioned History of Plants, it is said, the Country People stuff the Bedticks and Bolsters on which their Children lye, with dry'd *Fern*, from a Notion that it is good against the Rickets, and to strengthen them.

T A B.

T A B. VIII. Fig. 10. *a, b.**MUSK-MELON*, or *Musk-Million* SEED.

THE *Latin* Name, *Melo*, comes from the *Greek* *Μῆλον*, an Apple, from the Form of the Fruit. The *Italians* call them *Milo* or *Millio*, from *Millione*; because, as they say, out of a Million there is scarce a good one to be found, which probably may be the Reason of calling them *Musk-Million*, otherwise one would be apt to take *Million* to be a Corruption of the Word *Melon*. They were also called *Melones Muschatellini*, from their agreeable Flavour, whence our *English* Name *Musk-melon*.

SYNONYMA.

Melo, *Offic.* *Ger.* 771. *Emac.* 917. *Raii Hist.* i. 644. *Park. Parad.* 525. *Melo vulgaris*, *C. B. Pin.* 310. *Hist. Oxon.* ii. 29. *Tourn. Inst.* 104. *Elem. Bot.* 88. *Boerb. Ind. A.* ii. 77. *Rupp. Flor. Jen.* 41. *Melones*, *J. B.* ii. 242.

CHARACTER of Plant and Flower.

The Stalks of the Plant lye flat upon the Ground, are long, branched, and rough; the Leaves are much like those of the common *Cucumber*, but smaller, rounder, and not so much covered. The Flower consists of one Leaf, which is of the expanded Bell-shape, cut into several Segments, and exactly like those of the *Cucumber*;

Xx

some

some of these Flowers are barren, not adhering to the *Embryo*; others are fruitful growing upon the *Embryo*, which is afterwards changed into a Fruit; for the most part of an oval Shape, smooth, or wrinkled, and divided into three seminal Apartments, which seem to be cut into two Parts, and contain many oblong Seeds. The Meat, when ripe, is of a faint Yellow-Colour, and very Juicy.

Gerrard counts four Kinds; the common Melon, the small Sugar Melon, the Pear-shaped Melon, and the Spanish Melon.

Besides the first of these, which is the common Musk Melon, *Mr. Miller* mentions five other Kinds, the Recital of which will be convenient here, that the Reader may have in his View the Names of the several Varieties had at any Time amongst us.

2. *Melo rotundus parvus*, C. B. P. The small round Musk-Melon, commonly called the *Portugal* or Pocket Melon.

3. *Melo reticulatus* J. B. Netted or wrought Melon.

4. *Melo magnus cortice virente, semine parvo*, J. B. Greater Musk-Melon, with a smooth green Skin, and small Seed.

5. *Melo Hispanicus, cortice alba, intus rubente*, White Spanish Melon, *vulgo*.

6. *Melo cortice levi, intus virente*, the green-fleshed Melon, *vulgo*.

The same Author adds, in his second Volume, for the Satisfaction of the Curious, four other Kinds, which are

far more delicious in Flavour, and therefore preferable for the Table, which we shall add here, to make our Account the more compleat.

7. The **Zatte Melon**, is a small rough-coated Melon, which seldom grows larger than a Man's Fist, is very red within, and the Flesh very delicate.

8. The **Sucado Melon**, is larger than the former, of an oblong Shape, more wrought on the Outside, is very Red within, and the Flesh is firm, and of a vinous Flavour.

9. The **Cantaleupt Melon**, is a longer Fruit than either of the former, and pretty much wrought on the Outside; the Flesh is not quite so red as either of them, but is of a rich vinous Flavour.

10. The **Romanetto Melon**, is a middle-sized Fruit, of an oblong Shape; the outer Coat is greener than either of the former, and not very much wrought; the Flesh is very red, and of a delicate Flavour.

In short, there is no End of the Variations found among Melons, since without the due Precautions, which the above Author gives in his excellent Directions, they degenerate in three or four Years time from what they were at first. I have now by me four and twenty Sorts of Melon Seeds in my Collection, which have the same Features with each other, and differ only in their Size or somewhat in Breadth or Length in their Proportion, some being narrower and longer, some broader and shorter; the Description therefore of one Sort will be sufficient for all.

MICROSCOPICAL Description.

Fig. 10. a. is a View of a **Melon Seed** enlarged from the natural Size represented by the Figure near it. It is of an elliptical Form, rounder at the Bottom than at the Top; near which on one Side the *Umbilicus* appears, being a small Slit hardly perceptible to the naked Eye, but being enlarged by the Microscope is represented at *b*. On each side, near the *Apex*, there is a little *Sulcus* running downwards obliquely, not above a sixth Part of the Seed's Length, near the Edges, and is generally of a whitish Colour, at least, lighter than the rest of the Surface; these Seeds are generally of a Yellowish-Colour; some sorts being deeper than others. The whitest and largest of all those Seeds I have, is of a Kind of the **Spanish Melon**. The *Nuclei* are of the same Shape with their Husk or Shell, except that the *Apex* is more pointed and sharp, which Point is the rudimental *Germen* of the Plant. The *Nucleus* is sweetish, pleasant to the Taste, and white. The Shell is strong and woody.

VIRTUES.

The Flesh of the **Melon** is generally accounted very Cooling, and the Seeds are among the greater cold Seeds. Yet *Boerhaave's* History of Plants, p. 524. speaks a contrary Opinion with regard to the former. I have translated his Words here, which are but short: "The **Melon** is reckoned a cold Fruit, but Ex-
" perience

“ perience compells me to believe the Contrary ; for as
 “ both the Smell and Taste is aromatic, which we know
 “ from the latter, therefore the Plant is aromatic ; for
 “ if it be eaten in too great Quantities, it causes Men to
 “ make bloody Urine ; hence it must be heating, and
 “ scarce any thing stimulates to Venery more.”

Here is a plausible Reason to imagine this is not a cold Fruit ; but supposing the Flesh of this, as well as the **Cucumber** and **Citrus**, to be cold, yet it does not appear that the *Nucleus* of the Seed of either is cold, at least in the Degree mentioned and ascribed to them for many Ages, in *Pharmacy* ; and whosoever expects much of the greater cold Seeds, as Refrigerants, may be deceived.

It does not follow, that because the Plants or Fruits, which contain them, may be cold, the Seeds must be so too ; for we have several Instances of contrary Qualities produced in different Parts of the same Plant ; for the Proof of which we need go no farther than the **Occidental Anacardium** in the Plate before you ; where it appears, that various Juices pass through their several Vessels in the same little Pedicle ; to the Substance of the Fruit, an austere, vinous Juice ; to the cellular Substance of the Shell, an acrimonious burning Oil ; and to the *Nucleus* or Kernel of the same Nut, a pleasant, sweet, smooth Oily Taste, not less so than that of the Walnut, Almond, or any other, from which a sweet Oil may be obtained by Expression. Such an Oily pleasant Taste is proper to all this Class of Seeds, and such an
 Oil

Oil may be obtained from them also; I mean those of the **Citrulls**, **Cucumber**, **Melon**, **Gourd**, and **Pom-pion**. Hence it is easy to conclude, that only a smooth emollient Medicine is to be obtain'd by Emulsions of these Seeds, which may as well be obtained from **Almonds**, **walnuts**, **hazlenuts**, or such like, and not a Refrigerant strictly speaking.

T A B. VIII. Fig. 11.

CUCUMBER SEED.

DIOSCORIDES calls this Plant in *Greek* Σίκυς, by others it was called σιλυός, and by the ancient *Greeks* Κικυός. The *Latin* Name is *Cucumer*, or *Cucumis*; *Boerhaave* says from *Curvatura* or *Curvimer*, because of the Crookedness of the Stalks of the Plant; this is the same Derivation which this Author gives to the *Cucurbita* or **Gourd**; and indeed it might as well be given to every other Plant with a crooked Stalk, which would be too general and loose a Manner of accounting for the Names of Plants. May not the *Latin* Name here come from Κεκέμιον, the Name of a Vessel which had a large swell'd Belly, which Form is not unlike a **Cucumber**; hence also *Cucuma*, which is a Brass Vessel shaped like a **Cucumber**. Our *English* Name has the *Latin* for its Parent, which is also the Original of the *Italian*, *Concomero*; the *Spanish*, *Cogombro*;

Cogombro; the *French Coucombres*, the *German Cucumens*, and the *Dutch Concommeren*.

SYNONYMA.

Cucumis hortensis, *Offic.* *Cucumis sativus*, *Park. Theat.* 772. *Cucumis vulgaris*, *Ger.* 762. *Emac.* 910. *Raii Hist.* i. 645. *Hist. Oxon.* ii. 31. *J. B.* ii. 245. *Chab.* 134. *Cucumis sativus*, *vulgaris*, *C. B. Pin.* 310. *Tourn. Inst.* 104. *Elem. Bot.* 87. *Boerb. Ind. A.* ii. 77. *Rupp. flor. Jen.* 41.

CHARACTER of Plant and Flower.

The Roots are strait, and have white fibrous Filaments; the Stalks thick and hairy, lying on the Ground. The Leaves are every way larger than those of the Melon, and more angular, being as broad or broader than one's Hand, set alternately, rough, and indented round the Edges. The Claspers and Flowers arise from the *Alæ* of the Leaves. The Flowers are of a yellow Colour, consisting of a single Leaf, shaped like a Bell, expanded widely towards the Top, and divided into several Segments. Some of the Flowers are Male and Barren, having no *Embryo*, but only a large *Stilus* in the Middle, upon which the *Farina* is lodg'd; others are Female or Fruitful, and fastened to an *Embryo* which afterwards becomes a fleshy Fruit, for the most Part oblong and turbinated, divided into three or four Cells inclosing many oblong Seeds.

Tournefort mentions six Species of this Plant, which are preserved in Botanical Gardens for Demonstration; but *Miller* speaks of no more than three: 1. *Cucumis sativus vulgaris, maturo fructu subluteo*, the common
CUCUM.

Cucumber. 2. *Cucumis sativus vulgaris, fructu albo,* the white **Cucumber.** 3. *Cucumis oblongus Dod.* the long *Turkey Cucumber.* There may be Varieties of each of these, which can be only accidental *Lusus*es of Nature.

Gerrard, besides 1. the common **Cucumber**, mentions three other Kinds; 2. *Cucumis anguina*, Adder's **Cucumber**; 3. The Pear-shaped **Cucumber**; 4. A large **Cucumber** raised from *Spanish Seed*.

There is something very Particular in the Account given of the *Cucumis Anguina*. *Gerrard* says, the Long or Serpent Kinds are first made so by Art, and are afterwards continued so by Nature. This Fruit, while very young, being put into a hollow Cane or other Thing made on Purpose, will grow into the Shape of the Tube or Vessel that contains it; this has often been experienced by many, among whom I have many times fasten'd narrow Vials to a Pear-Tree, wherein I put a Flower with the Embryo of the Fruit; and in due Time, when it grew so large as to come into Contact with the Sides of the Vial, the Resistance there directed the Protrusion of the nutritious Juice strait forward, according to the Shape of the Vessel; so that instead of a roundish Pear, I had a cylindrical one. But the Doubt remains with me, whether a Tree raised from the Seeds of this long Pear, should produce Fruit of the same Shape with that made so by Art. *Matthiolum* and *Gerrard* affirm this of the **Cucumber**; the former says, he has seen it when yet flowering, put into a Vessel or Mould, wherein it had grown to a prodigious Length, and that the Fruit produc-
ed

ed from the Seeds of this so form'd by Art, grew into a Serpentine Shape, and so from an artful Formation became and continued a natural One. This Opinion was also asserted by *Dodon.* But *J. Baubine* believes this Species to be different from the common Kind; and that the Shape of the Fruit is altogether the Work of Nature.

Whether this be so or not, one would be induced to believe that the Alteration of the Form of the Fruit should have no Influence on the Seeds; for if that were the Case, then all the Fruit upon the same Tree, which every one knows have many accidental Differences in their Shape, might as well produce and continue each its new Species shap'd like itself, and so vary on for ever. We might bring many natural Arguments against such a Creation of new Species of Fruits, but our Design here is of another Nature; therefore we shall omit Controversy.

MICROSCOPICAL Description.

The Seeds of the **Cucumber**, *Fig. 11.* are like those of the **Melon** described above, in all Respects except two: First, they do not form so pointed an *Apex* as the latter, and the *Umbilical* Hole is directly at the Top; and secondly, there is generally a pointed Process like a little Tail at the *Basis* of this Seed.

VIRTUES.

The Fruit of the **Cucumber** is cooling and watry, and therefore to be eaten only by such as are of a hot dry Constitution. Its culinary use is so well known, as not to

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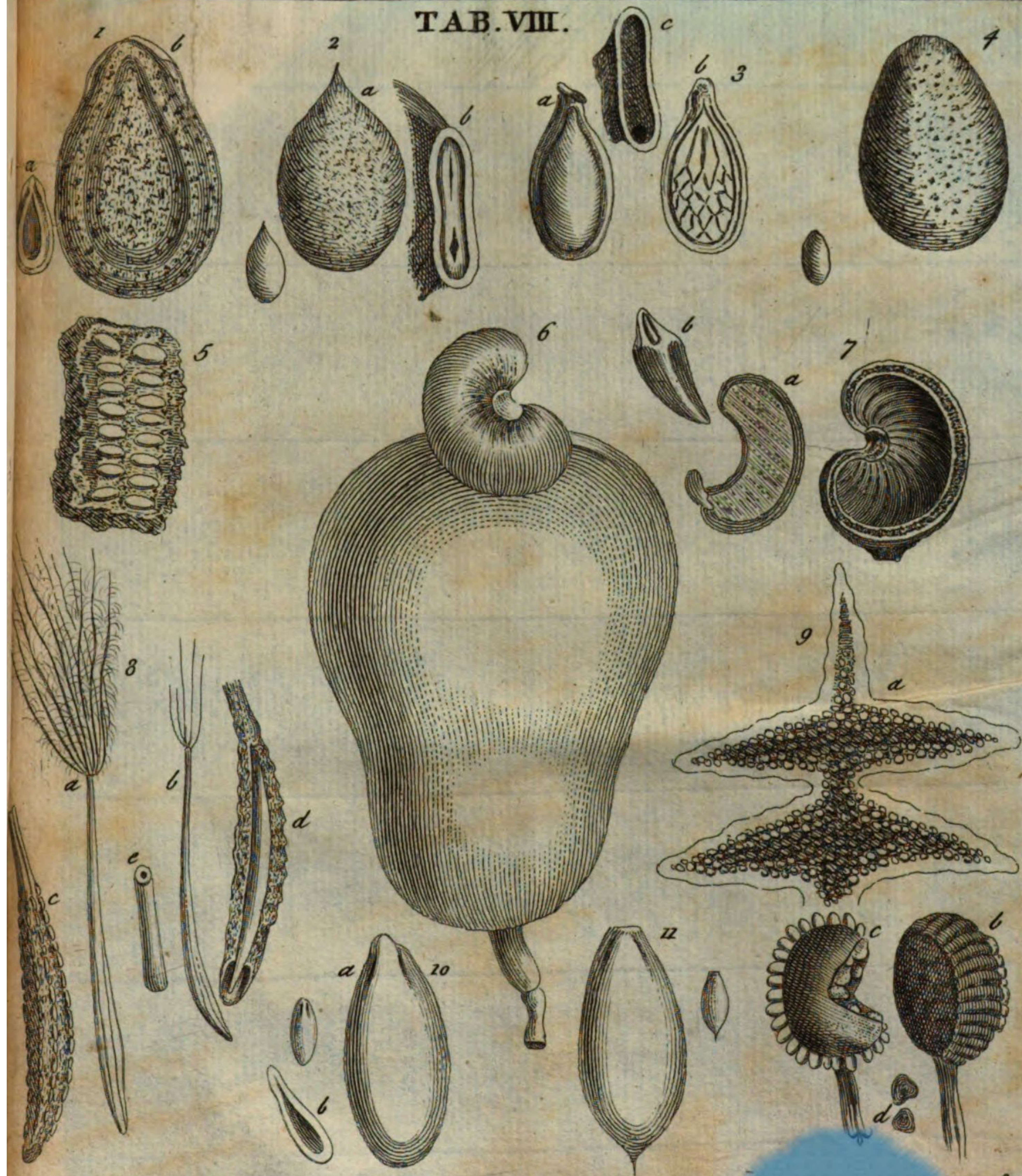
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need any Mention here. I must however cite one Family Receipt made of **Cucumbers**, which I saw try'd with Success two or three Times : ' Take **Cucumbers** sliced crosswise into Pieces about twice as thick as an *English* Crown ; fry them in as much Oil as will cover them, till they are well done ; then press out the Juice by squeezing them between two Trenchers, and keep it for use in a Glass Vessel. It is to rub and embrocate the Parts affected with Stitches or Spasmodic Pains.

The Seeds are *reckon'd* among the greater cold Seeds, are emollient, and therefore good among Diuretics, or in Emulsions, being pretty much of the same Nature with those of the **Melon**, but not quite so agreeable to the Taste. *Quincy* says, the Fruit is cooling and viscid, and therefore apt to dispose the Blood to putrid Fermentations ; which may occasion those putrid Fevers at the End of the Year. This is certainly the Case with such as eat a Meal of them at a time, as many poor People are forced to do, especially since they cannot correct them with good Wine, nor obtain any other Food to eat with them at the same Time ; but when eaten by way of Sauce with Vinegar and Pepper, accompanied with a good Meal of wholesome Victuals, they cannot be hurtful, as they are the Production of the warmest Season of the Year.

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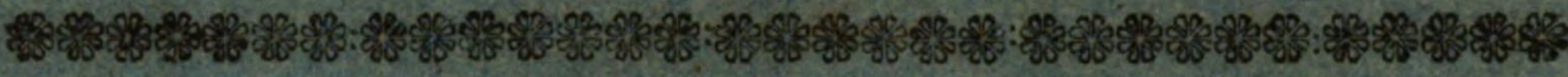
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